Medical TIMES

THE JOURNAL OF GENERAL PRACTICE

CLINICAL CAMERA
See page 805
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Prostatic Surgery

New Treatment for Rheumatic Fever

Eczema of Infants and Children

Antibiotics: A Panel Discussion

Ovarian Dysfunctions

Investing

Statistics on Avon

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VOL. 86 JUNE, 1958 NO. 6

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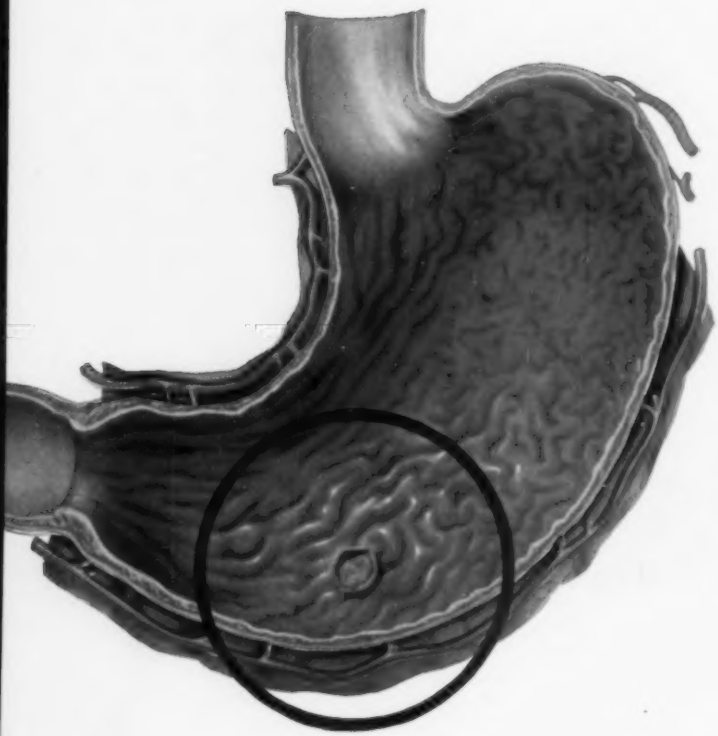
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1. Cecil, R.L., and Loeb, R.F.: A Textbook of Medicine. W.B. Saunders Co., Philadelphia, 1955, 9th ed., p. 870.

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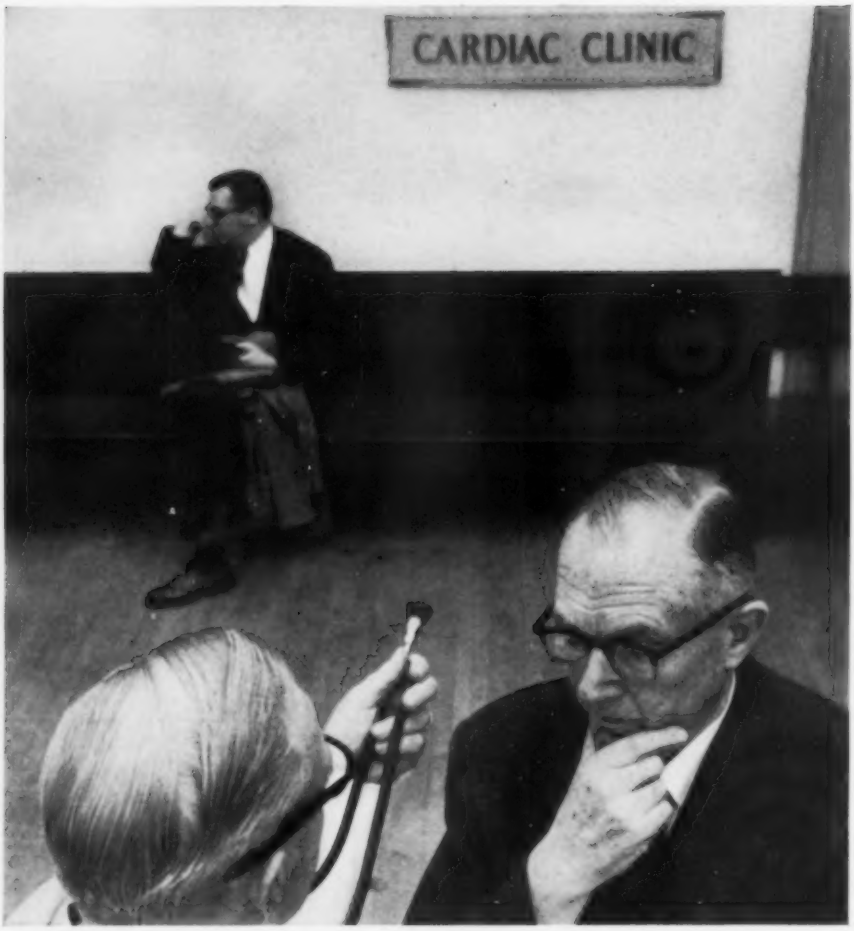
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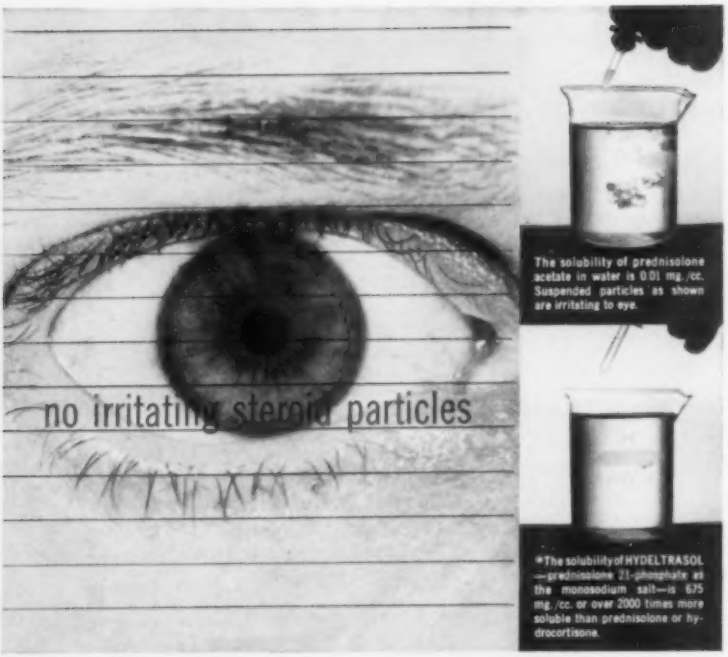
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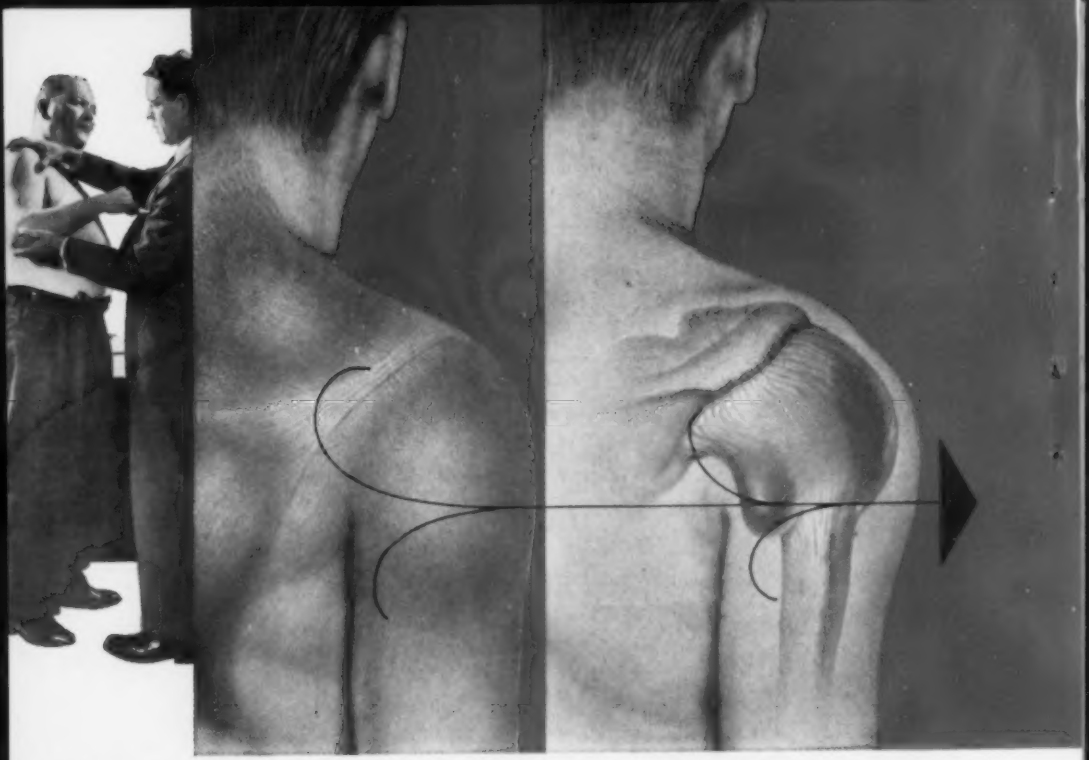
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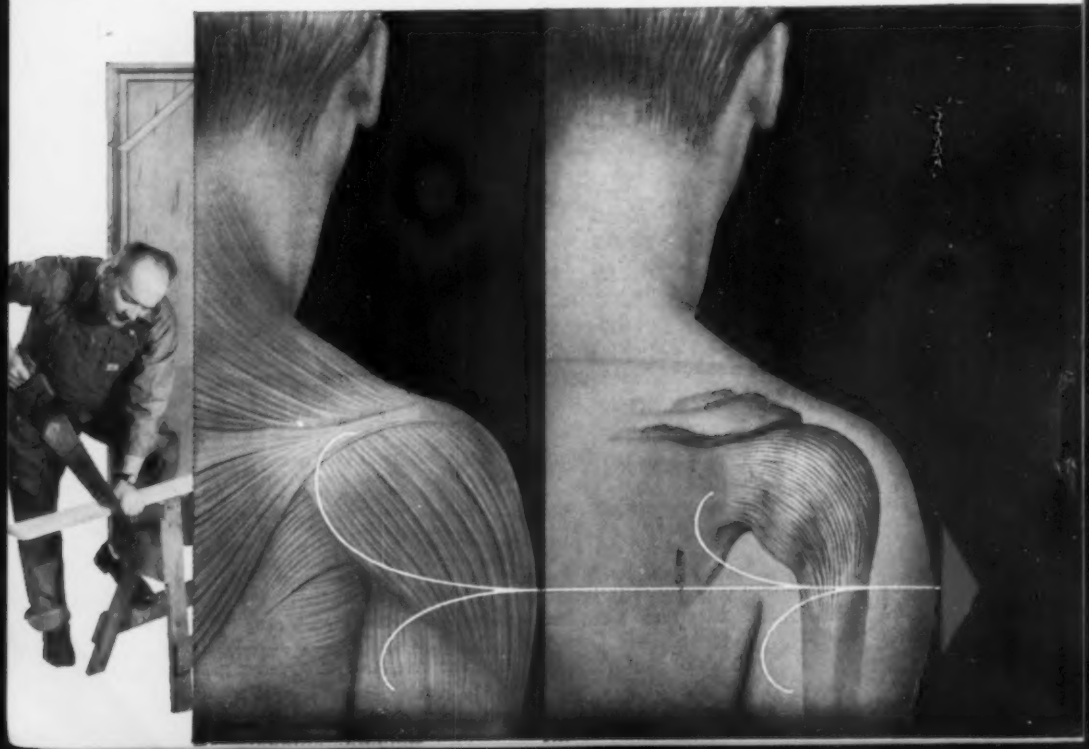
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joints and
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1. Comroe's Arthritis: Hollander, J. L., p. 149 (Fifth Edition, Lea & Febiger, Philadelphia, Pa. 1953). 2. Merck Manual: Lyght, C. E., p. 1102 (Ninth Edition, Merck & Co., Inc., Rahway, N. J. 1956).

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You can take advantage of buccal vascularity for rapid, efficient, thorough absorption of androgen. Metandren Linguets offer the therapeutic equivalent of intramuscular androgen, without painful injections, local reactions, irregular doses or lost working hours.

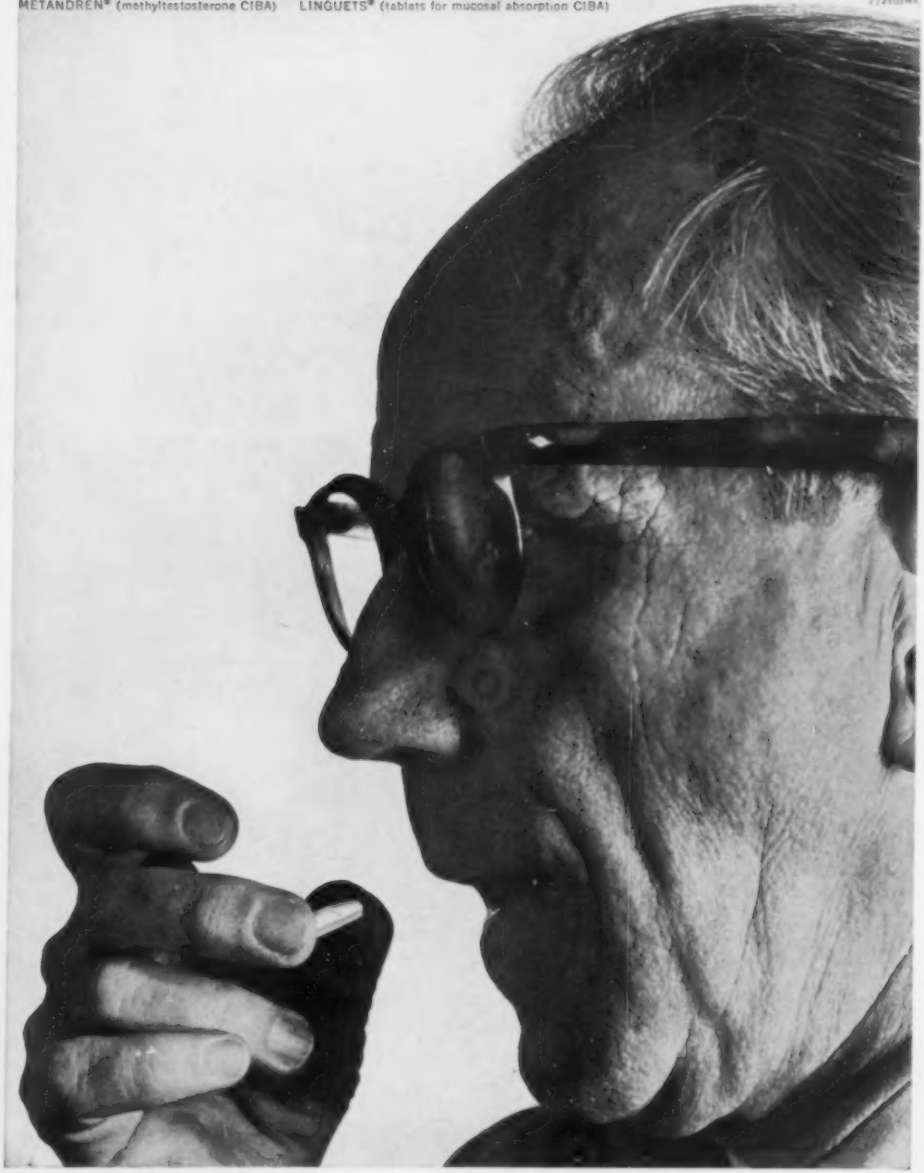
In Males climacteric, impotence, angina pectoris. **In Females** menopause, frigidity, premenstrual tension and dysmenorrhea, functional uterine bleeding. **In Both** for anabolic effects and chronic debility after: severe injury, prolonged illness, major surgery, severe malnutrition, severe infection.

Metandren® Linguets®

SUPPLIED: LINGUETS 5 mg. (white, scored) and 10 mg. (yellow, scored)

CIBA SUMMIT, N. J.

METANDREN® (methyltestosterone CIBA) LINGUETS® (tablets for mucosal absorption CIBA)





Off the Record . . .

True Stories From Our Readers

Each incident described has been contributed by one of our readers. Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported German apothecary jar will be sent in appreciation for each accepted contribution.

Touché

During the middle of a balmy summer evening, my sleep was disturbed by the frantic voice of a young woman. "I can't tell you who this is," she gasped, "but this is an emergency—how do you take a douche?"

W.F.G., M.D.
Atlantic, Ia.

How Indeed!

As I was leaving the delivery room, I met the patient's seven year old sister.

I said to her "congratulations, your sister had a real nice baby girl, and now you are an aunt."

She looked at me and said, "Me, an aunt? How can I be, I'm not even married."

L.L., M.D.
Allston, Mass.

Where's the Big . . .?

Some years ago at a local hospital, there was an intern named Dr. Pugh. During the course of one afternoon the operator paged this fellow at some length. A little girl sitting with her mother leaned over and asked, "Haven't they found that bad smell yet?"

G.A.K., M.D.
Des Moines, Ia.

Loquacious Veracious

Female patient—age, 18 years.

"When did you menstruate the last time?" I asked the question for the third time.

Wife: "John, must I tell him?"

John: "Yes, he's the doctor, tell him anything."

Wife: "We did it a little last night."

P.H.W., M.D.
Avondale, N. C.

The Price is Right

One of my patients button-holed me once for a prescription for summer sores. For this service I told him there would be no charge when he inquired, "How much?" He said, "Go ahead and charge me, Doc—you gotta live." He already owed me $300.00 and had

—Concluded on page 27a

FOR CONTROL OF



ENOVID*

Prolonged or excessive menstrual flow of functional origin can be treated both therapeutically and prophylactically with Enovid.

The supportive action of two tablets of Enovid on the endometrium usually checks abnormal bleeding within six to twelve hours. A daily dosage of one or two tablets is then continued through the intermenstrual interval until day 25 of the cycle. The patient will menstruate approximately three days after discontinuance of therapy.

She is again treated with similar doses from day 5 to day 25 for two or three additional consecutive cycles.

MENORRHAGIA



OVID

A similar regimen is employed if the patient is seen during the intermenstrual interval. Even though no bleeding is present a dosage of one or two tablets daily is administered until day 25. Therapy is resumed from day 5 to day 25 for two or three successive cycles.

Each tablet of 10 mg. contains 9.85 mg. of norethynodrel, a new synthetic steroid, and 0.15 mg. of ethynylestradiol 3-methyl ether. G. D. Searle & Co., Chicago 80, Illinois.

ENOVID Oral Synthetic Endometropin
(brand of norethynodrel with ethynylestradiol 3-methyl ether)

*Trademark of G. D. Searle & Co.

SEARLE | *Research in the Service of Medicine*



New yellow tinted AEROPLAST* PROVIDES ADDED BENEFITS IN PATIENT CARE

In clinical use as a primary surgical dressing, as a secondary dressing after removal of initial gauze-tape, or as a skin protectant to prevent or clear excoriation—Aeroplast surgical dressing demonstrates* unique advantages:

CHOICE OF SIZES

12 oz. tinted
for frequent operating room use

3 oz. tinted
convenient for surgical carts and for office use

6 oz. clear
the original Aeroplast still available

Rx no longer needed

- **easy, rapid spray-on technic**
- **conforms to problem wound contours without tape or bulk**
- **plastic film forms waterproof bacterial barrier; antibacterial; dependably sterile dressings**
- **protects incision and adjacent area from drainage, urine, feces and other outside contamination**
- **permits visual inspection without removing dressing; allows free access for palpation and auscultation; no undesired restriction of respiration or circulation**
- **increases patient comfort; no bulk, no tape; non-sensitizing, non-allergenic**

16 MM COLOR-SOUND FILM now available for professional meetings . . . to schedule write: Aeroplast **CORPORATION**
420 Dellrose Avenue, Dayton 3, Ohio

Reports of clinical use sent on request

*AEROPLAST—U.S. PAT. NO. 2,804,073

—Concluded from page 23a

never paid a cent over a period of five years.

J.D.R., M.D.
Lexington, N. C.

Unbelievable

Years ago, I recall seeing an emaciated child of ten months with obvious rickets, and asked the mother, "Is this child getting enough milk?"—the reply was, "Well, the' ain't so much lef' after mah three yeah ole suckles." (This was a true situation—remedied with supplemental canned milk, substantial formula, vitamins *and* visiting nurse education.)

T.T.J., M.D.
Durham, N. C.

Aqua Vitae

Down in Jones County, North Carolina, there was a small neighborhood or settlement. I had delivered two sets of twins recently from that settlement. Then, a few days later, another physician delivered a set of twins from there—each set being boy and girl.

This other doctor's patient stopped me on my round at the hospital to tell me about her twins. I said, "My goodness! What kind of water do you folks drink down there?" She said, "We all drink from the same neighborhood well." Jokingly, I said, "Well, let's bottle that water and sell it to the men." One lady in her room said she would buy a jug of the water for her husband. Then I spoke to several men and each wanted to try a jug of it. However, the wives who heard the bargaining for the so-called "potent" water objected. So, I went back to tell this lady about several men wanting jugs of the water and this innocent-acting mother of twins said, "Well, Doctor, if it is all that good, let's put down another well nearby."

C.F.W., M.D.
Kinston, N. C.

Your Turn

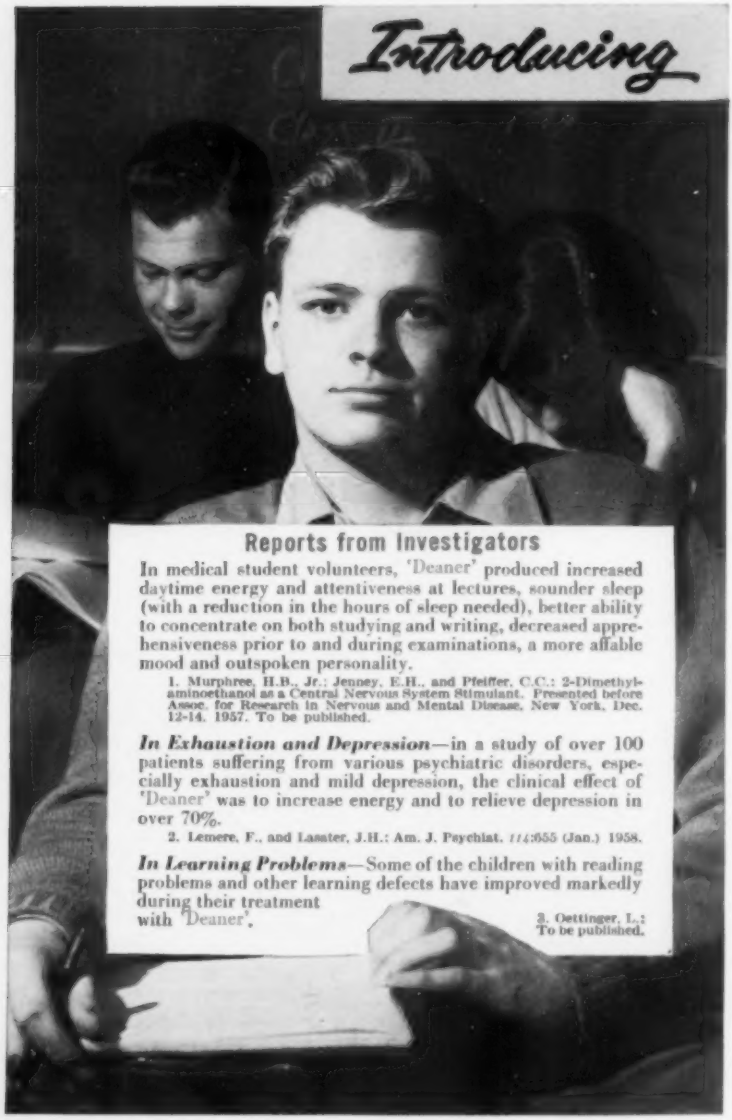
While on a vacation at the Lake several years ago, en route to my boat carrying a casting rod and a minnie-bucket filled with iced beer (to make it look like one going fishing), I passed a very comfortable gentleman lying in a hammock and sipping on a very large hi-ball. Giving him a nice smile I said, "Good morning, Doctor." "How did you know I was a doctor?" he queried. Showing him my "bait," I answered that in my experience most people found up so early in the morning with a drink were invariably medics. He grinned and said, "What are you—a psychiatrist or something?"

W.F.G., M.D.
Atlantic, Ia.

Hard Blow

An indignant patient of mine brought the fully itemized bill from her recent hospitalization into my office. Immediately she pointed to a charge labeled "Tissues"—$15.00 and exclaimed, "I certainly did not use that much 'Kleenex.'"

W.C.J., M.D.
Booneville, Miss.


Introducing
Reports from Investigators
In medical student volunteers, 'Deaner' produced increased daytime energy and attentiveness at lectures, sounder sleep (with a reduction in the hours of sleep needed), better ability to concentrate on both studying and writing, decreased apprehensiveness prior to and during examinations, a more affable mood and outspoken personality.
1. Murphree, H.B., Jr.; Jenney, E.H., and Pfeiffer, C.C.: 2-Dimethylaminoethanol as a Central Nervous System Stimulant. Presented before Assoc. for Research in Nervous and Mental Disease, New York, Dec. 12-14, 1957. To be published.
In Exhaustion and Depression—in a study of over 100 patients suffering from various psychiatric disorders, especially exhaustion and mild depression, the clinical effect of 'Deaner' was to increase energy and to relieve depression in over 70%.
2. Lemere, F., and Lasater, J.H.: Am. J. Psychiat. 114:655 (Jan.) 1958.
In Learning Problems—Some of the children with reading problems and other learning defects have improved markedly during their treatment with 'Deaner'.
3. Oettinger, L.: To be published.

the Anti Depressant

Deaner™

2-dimethylaminoethanol (deanol)

A Totally New Molecule for the Treatment of

Chronic Fatigue States

Mild Depression

Chronic Headache

Migraine

Neurasthenia

In extensive clinical trials, DEANER has proved to be of value in that large contingent of patients with vague, undefined symptoms, who feel under par and lack energy or are mildly depressed.

Patients with chronic headache including migraine are benefited.

Advantages of 'Deaner'

Effects come on gradually and are prolonged . . .

Without causing hyperirritability, jitteriness or emotional tension . . .

Without causing excess motor activity . . .

Without causing loss of appetite . . .

Without elevating blood pressure or heart rate . . .

Without sudden letdown on discontinuance of therapy.

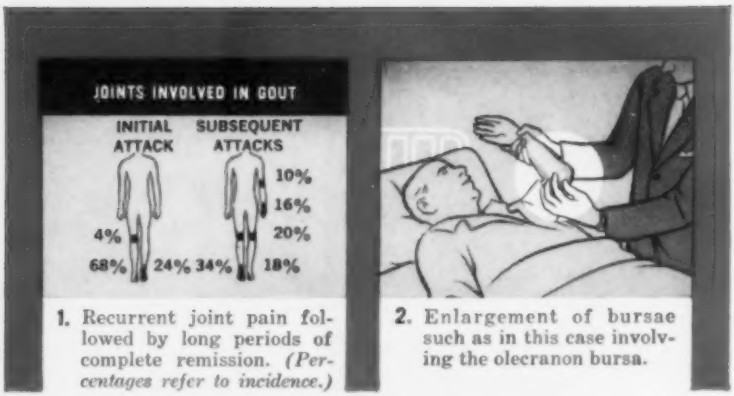
Dosage

Initially, 1 tablet (25 mg.) daily in the morning. Maintenance dose, 1 to 3 tablets (25 mg. to 75 mg.) for adults; ½ to 3 tablets for children. Full benefits may require two weeks or more of therapy.

'Deaner' is supplied in 25 mg. scored tablets in bottles of 100.

Another Riker *First*

LOS ANGELES

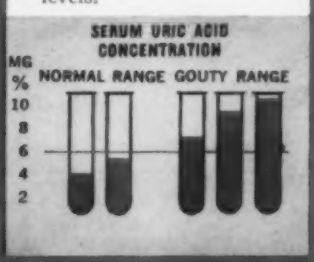


1. Recurrent joint pain followed by long periods of complete remission. *(Percentages refer to incidence.)*

2. Enlargement of bursae such as in this case involving the olecranon bursa.

FROM THESE FINDINGS

3. Elevated serum uric acid levels.



4. Colchicine test: full dose (0.5 mg.) every 1 to 2 hours until pain is relieved or nausea, vomiting or diarrhea occur. The test requires usually 8 to 16 doses. Pain relief is highly indicative of gout.



...SUSPECT GOUT:

℞ BENEMID®

PROBENECID

A SPECIFIC FOR GOUT

Once findings point to gout, long-term management can be started with BENEMID. This effective uricosuric agent has these unique benefits:

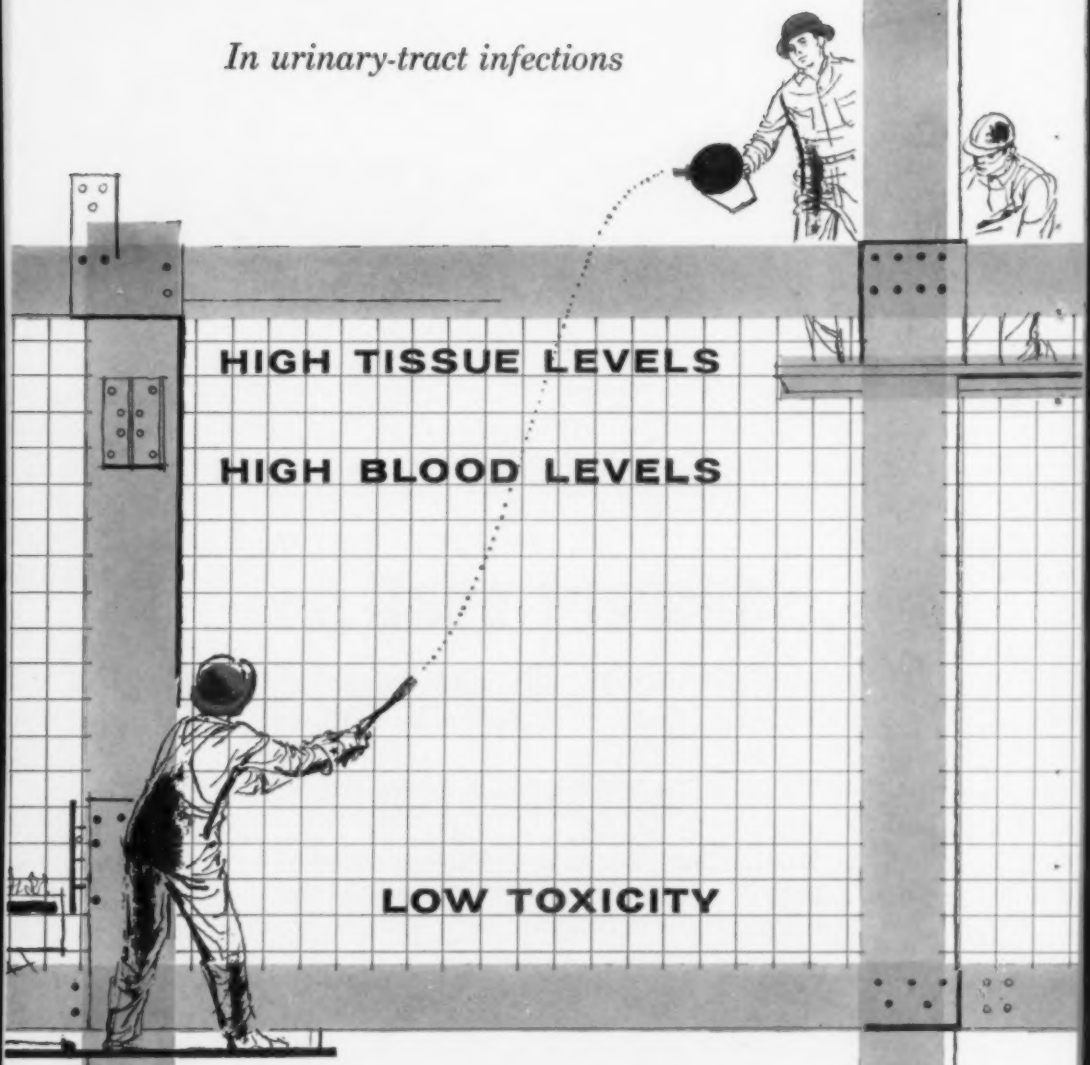
- Urinary excretion of uric acid is approximately doubled.
- Serum uric acid levels are reduced.
- Uric acid deposits (tophi) in tissues are mobilized.
- Formation of new tophi can often be prevented.
- Fewer attacks and severity is reduced.

RECOMMENDED DOSAGE: 0.25 Gm. (½ tablet) twice daily for one week followed by 1 Gm. (2 tablets) daily in divided doses.

MSD **MERCK SHARP & DOHME**
DIVISION OF MERCK & CO., Inc., PHILADELPHIA 1, PA.

Benemid is a trade-mark of Merck & Co., Inc.

In urinary-tract infections



SUSPENSION TABLETS

SULFOSE®

Triple Sulfonamides, Wyeth

(*Trisulfapyrimidines: Sulfadiazine, Sulfamerazine, Sulfamethazine*)

PHYSICIANS' COUNCIL · INFORMATION ON CHILD HEALTH ·

This advertisement conforms to the Code for Advertising of the Physicians' Council for Information on Child Health.

Wyeth®

Philadelphia 1, Pa.

Diagnosis, Please!

Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology,
New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

WHICH IS *YOUR* DIAGNOSIS?

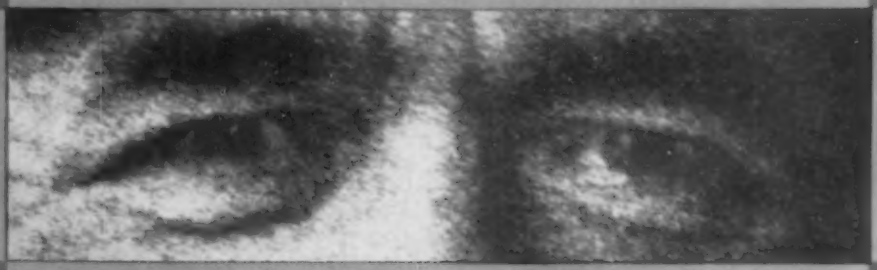
1. Tumor
2. Tuberculosis
3. Polycystic disease
4. Normal

(Answer on page 196a)



AN AMES CLINIQUICK

CLINICAL BRIEFS FOR MODERN PRACTICE



what are the 7 "dont's" of office psychotherapy?

(1) Don't argue—let patient "talk out" his troubles. (2) Don't counsel—help him solve his own problems. (3) Don't be hostile—allow patient to express hostility without reciprocating. (4) Don't be unsure—stress significance of normal or abnormal physical findings in relation to symptoms. (5) Don't be too reassuring—overoptimism may suggest you take the symptoms too lightly. (6) Don't approve or censure. (7) Don't be too credulous—patients' words may conceal hidden meanings.

Source—Hyman, M.: Some Aspects of Psychiatry in General Practice, GP *16*:83 (Oct.) 1957.

calmative **NOSTYN®**
Ectylurea, AMES
(2-ethyl-*cis*-crotonylurea)

for tranquil—not "tranquilized" patients

"Anxiety and nervous tension states appeared to be most benefited....The patients experienced and expressed a feeling of greater inward security, serenity....Mental depression, one of the undesirable side actions in many other sedatives, did not develop in any of the patients...."*

*Bauer, H. G.; Seegers, W.; Krawzoff, M., and McGavack, T. H.: A Clinical Evaluation of Ectylurea (NOSTYN®), in press.

dosage: *Children*—150 mg. (½ tablet) three or four times daily. *Adults*—150-300 mg. (½ to 1 tablet) three or four times daily.

supplied: 300 mg. scored tablets; bottles of 48 and 500.

AMES COMPANY, INC · ELKHART, INDIANA
Ames Company of Canada, Ltd., Toronto

Three steps are necessary–



In establishing correct eating patterns

supervision by the physician[1,2,3]

a balanced eating plan[1,2,3]

selective medication[1,2,3]

Obedrin®

and the 60-10-70 Basic Plan

Following the establishment of desired eating patterns—the maintenance of the acquired habits is most important. Here, Obedrin and the 60-10-70 Plan can be valuable aids to both the physician and patient.

Obedrin provides:

- Methamphetamine for its proven anorexigenic and mood-lifting effects.
- Pentobarbital as a balancing agent, to guard against excitation.
- Vitamins B_1 and B_2 plus niacin to supplement the diet.
- Ascorbic acid to aid in the mobilization of tissue fluids.

1. Einfeldar, H.W.: Am. Pract. & Dig. Treat. 5:778 (Oct. 1954)
2. Frend, S.C.: G.P. 7:83 (1953)
3. Sherman, R.J.: Medical Times, 82:107 (Feb. 1954)

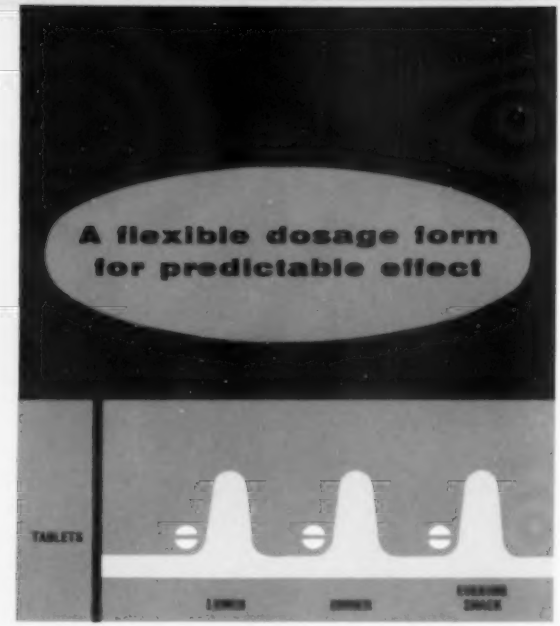
Formula: Tablets and Capsules

Semoxydrine® HCl (Methamphetamine HCl)	5 mg.
Pentobarbital	20 mg.
Ascorbic Acid	100 mg.
Thiamine Mononitrate	0.5 mg.
Riboflavin	1 mg.
Nicotinic Acid	5 mg.



THE S. E. MASSENGILL COMPANY

Bristol, Tennessee • New York • Kansas City • San Francisco



Obedrin tablets provide a flexible dosage form
which may be prescribed to depress the appetite
at peak hunger periods. The pentobarbital content
assures minimal central nervous stimulation,
and the 60-10-70 Basic Plan provides for a balanced
food intake with sufficient protein and roughage.
Obedrin is available in tablet and capsule form.

Advantages of Obedrin

An effective anorexigenic agent
A flexible dosage form
Minimal central nervous stimulation
Vitamins to supplement the diet
No hazards of impaction



Currently, mailings will be forwarded only at your request. Write for 60-10-70 menus, weight charts, and samples of Obedrin.

Obedrin®

and the 60-10-70 Basic Plan

THE S. E. MASSENGILL COMPANY

Bristol, Tennessee • New York • Kansas City • San Francisco



FILIBON helps

her meet the nutritional demands of pregnancy in today's active life by supplying full vitamin-mineral supplementation, plus . . .

- A phosphorus-free formula
- Vitamins B_6 and K—prophylactically important
- Noninhibitory intrinsic factor to augment B_{12} absorption
- New, better-tolerated source of iron
- Important trace elements

to keep her on the regimen you prescribe

- the attractive FILIBON Jar
- the FILIBON capsule, small and easy to swallow
- the convenient FILIBON dosage, easy to remember—only one a day

Each soft shell FILIBON capsule contains:

Vitamin A	4,000 U.S.P. Units	Iron (as Fumarate)	30 mg.
Vitamin D	400 U.S.P. Units	Intrinsic Factor	5 mg.
Thiamine Mononitrate (B_1)	3 mg.	Fluorine (CaF_2)	0.015 mg.
Pyridoxine (B_6)	1 mg.	Copper (CuO)	0.15 mg.
Niacinamide	10 mg.	Iodine (KI)	0.01 mg.
Riboflavin (B_2)	2 mg.	Potassium (K_2SO_4)	0.835 mg.
Vitamin B_{12}	2 mcg.m.	Manganese (MnO_2)	0.05 mg.
Ascorbic Acid (C)	50 mg.	Magnesium (MgO)	0.15 mg.
Vitamin K (Menadione)	0.5 mg.	Molybdenum ($Na_2MoO_4.2H_2O$)	0.025 mg.
Folic Acid	1 mg.	Zinc (ZnO)	0.085 mg.
Ferrous Fumarate	90 mg.	Calcium Carbonate	575 mg.

In the picture . . . during pregnancy

Filibon*

PHOSPHORUS-FREE PRENATAL VITAMIN-MINERAL SUPPLEMENT LEDERLE



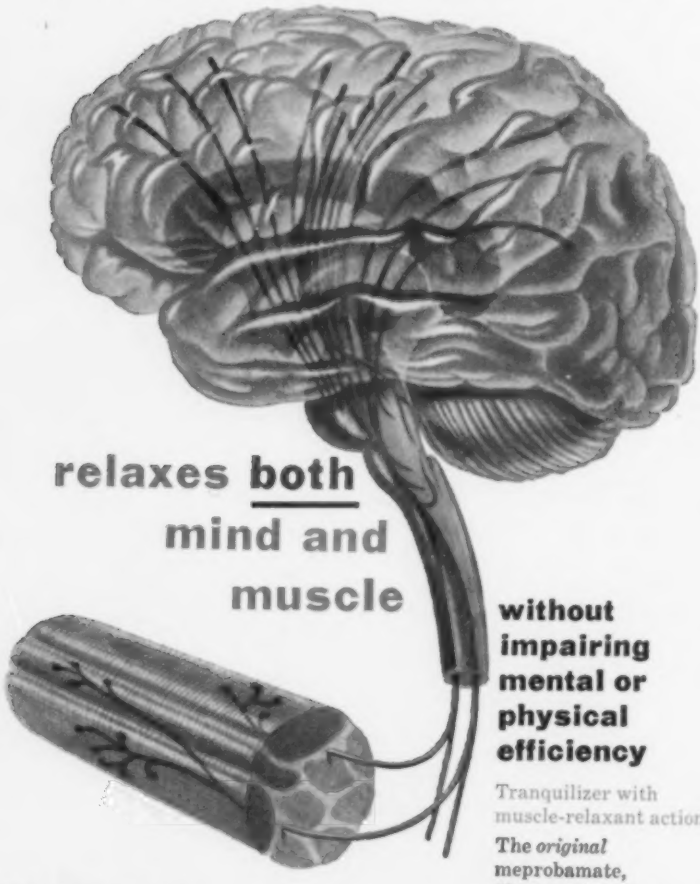
DOSAGE / one or more capsules daily

SUPPLIED / attractive re-usable bottles of 100 capsules

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Reg. U. S. Pat. Off.

Unexcelled advantages



relaxes **both** mind and muscle

without impairing mental or physical efficiency

Tranquilizer with muscle-relaxant action

The *original* meprobamate, discovered and introduced by

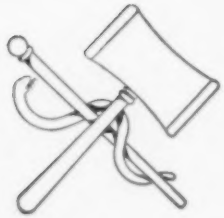
Miltown®

2-methyl-2-n-propyl-1,3-propanediol dicarbamate

WALLACE LABORATORIES
New Brunswick, New Jersey

CH-0032

Edited by Ann Ledakowich, Member of the Bar of New Jersey



What's Your Verdict?

A pregnant woman, no longer young, was disturbed and apprehensive that she could not have a normal delivery of the baby she had conceived, having had two previous stillbirths. The solution of a Caesarean section suggested itself to her, and consequently she consulted her physician, an osteopath. He promised to have another doctor operate because he was not qualified to perform a Caesarean.

When the time of delivery arrived and labor pains commenced, the woman expressed concern to her physician over her failure to deliver. She was sent back home and told not to worry. At this time fetal heart tones were audible and normal and quite strong. But later that night upon the expectant mother's entry into the hospital fetal heart tones could no longer be heard. Her physician arrived in the morning and referred her case to the head of the obstetrical department, but made no mention of a Caesarean.

Upon examination the obstetrician concluded that the fetus was dead, and that night performed an episiotomy to deliver the patient of the dead child.

The disappointed woman sued her physician for breach of contract. The jury returned a verdict in her favor for $5,000, from which the physician appealed.

"In an action for breach of contract," the physician contends, "damages awarded for grief and emotional injury should not be sustained. Such injury depends largely upon temperament and physical and nervous condition, and there is no possible standard by which such an injury can be even approximately measured. It is thus too speculative an injury to be compensated."

"It is true," is the woman's retort, "that in the ordinary commercial contract, damages are not recoverable for disappointment. But when a contract is concerned with interests of personality and matters of mental concern and solicitude, then a breach of such contract will inevitably result in mental suffering, and the contracting parties anticipate the payment of damages therefor in the event of breach."

What would be your decision?

Answer on page 200a



In bronchial asthma therapy—

prompt effect,

lasting relief



SUS-PHRINE

AQUEOUS EPINEPHRINE SUSPENSION 1:200
for subcutaneous injection

. . . because of the slow absorption of the portion in suspension and rapid absorption of the portion in solution, numerous clinical reports emphasize these advantages of Sus-Phrine in the treatment of bronchial asthma:

—is as prompt as the subcutaneous aqueous solution[1,2]
—is more prolonged than the intramuscular oil suspension[2,3]
—is a simple subcutaneous injection[3,4]
—may be easily self-administered by the patient[2,3]
—well-tolerated by children[1,3,4]

Supplied in 5 cc. vials and packages of 12, 0.5 cc. ampuls.
Reprints listed below and sample on request.

Brewer
Est. 1852

Brewer & Company, Inc., Worcester 8, Massachusetts, U.S.A.

1. Levin, S.: J. Ped. Clin. of N.A., 1:975 (1954).
2. Naterman, H.L.: J. of Allergy, 20:64 (1953).
3. Unger, A.H., and Unger, L.: Ann. of Allergy, 10:128 (1952).
4. Jenkins, C.M.: J. Nat. Med. Assn., 45:120 (1953).



FOR PAIN

Percodan®

(Salts of Dihydrohydroxycodeinone and Homatropine, plus APC)

TABLETS

and now **NEW**

Percodan®-Demi

ACTS FASTER...
usually within 5-15 minutes

LASTS LONGER...
usually for 6 hours or more

MORE THOROUGH RELIEF...
permits uninterrupted sleep through the night

RARELY CONSTIPATES...
excellent for chronic or bedridden patients

VERSATILE

New "demi" strength permits dosage flexibility to meet each patient's specific needs. PERCODAN-DEMI provides the PERCODAN formula with one-half the amount of salts of dihydrohydroxycodeinone and homatropine.

AVERAGE ADULT DOSE: 1 tablet every 6 hours. May be habit-forming. Available through all pharmacies.

Each PERCODAN® Tablet contains 4.50 mg. dihydrohydroxycodeinone hydrochloride, 0.38 mg. dihydrohydroxycodeinone terephthalate, 0.38 mg. homatropine terephthalate, 224 mg. acetylsalicylic acid, 160 mg. phenacetin, and 32 mg. caffeine.
*U. S. Pat. 2,628,185

Endo®

Literature? Write
ENDO LABORATORIES
Richmond Hill 18, New York

AND THE PAIN WENT AWAY FAST



For more certain control of

virtually **ALL**

DIARRHEAS

DONNAGEL

Robins

WITH

NEOMYCIN

ANTIBIOTIC • ADSORBENT • DEMULCENT • ANTISPASMODIC

Diarrheas due to neomycin-susceptible pathogens are effectively treated by the highly efficient intestinal antibiotic in DONNAGEL WITH NEOMYCIN, whose other ingredients serve to control toxic, irritative and emotional causes. *Result:* Early re-establishment of normal bowel function.

SUPPLY: Bottles of 6 fl. oz.

ALSO AVAILABLE: DONNAGEL, the original formula, for use when the antibiotic component is not indicated. Bottles of 6 fl. oz.

Each 30 cc. (1 fl. oz.) of the comprehensive formula of DONNAGEL WITH NEOMYCIN contains:

Neomycin sulfate (Equal to neomycin base, 210 mg.)	300 mg.
Kaolin (90 gr.)	6.0 Gm.
Pectin (2 gr.)	142.8 mg.
Dihydroxyaluminum aminoacetate	0.25 Gm.
Hyoscyamine sulfate	0.1037 mg.
Atropine sulfate	0.0194 mg.
Hyoscine hydrobromide	0.0065 mg.
Phenobarbital (¼ gr.)	16.2 mg.

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA

Coroner's Corner

A beautiful imported German apothecary jar will be sent to each contributor of an unusual case report.

Highway Accident

On a cold, wintry day, two cars collided at an intersection at 90°. One car hit the other at midriff, sending the car in uncontrolled slide. When it hit a telephone pole and stopped, the driver was found dead. The other driver was liable for manslaughter. This driver maintained that the other car was observed in irregular, zig-zag motion and going too fast without slowing or stopping, as if driven by a drunkard.

Autopsy findings were striking. There were no skin injuries observed at the autopsy. Left chest contained over three liters of clotted and old, dark blood. The left lung and heart were pushed over entirely to the right side, and there were no lacerations. Chest wall showed no injury or hemorrhage and no fracture of ribs. Striking thing was an aneurysm of the descending aorta, with an opening just below the subclavian artery. The opening was about 2.5 cm., and showed old, black edges with fresh tears. The aneurysm was about 6 cm. in diameter, and was dissecting the wall of the aorta slowly downwards. This rupture was obviously old with slow seeping, for probably more than an hour, when the final hemorrhage made the victim unconscious; hence, his uncontrolled driving of the car.

It goes without saying, there was no evidence of alcohol in the stomach or blood.

N.M.A., M.D.
Oswego, New York



When tetracycline therapy is indicated–

3 INDISPUTABLE POINTS



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Bristol

TO REMEMBER ABOUT

Tetrex

THE ORIGINAL TETRACYCLINE PHOSPHATE COMPLEX

U. S. PAT. NO. 2 [illegible]

1 **Tetrex requires no "activating additive"**

Each Tetrex Capsule contains:

Active ingredient:

TETRACYCLINE PHOSPHATE COMPLEX, 250 mg.
(tetracycline HCl activity)

Excipient: Lactose q.s.

2 **Tetrex produces maximum tetracycline serum levels**

—over 5000 human blood determinations have consistently demonstrated fast, high and prolonged serum levels in patients of all ages.[1,2,3,4,6,9,10,11,12,13,14,15]

3 **Tetrex has an impressive documented record of clinical effectiveness**

—more than 170 million doses of tetracycline phosphate complex in 1957, with 5 documented clinical reports by 9 investigators on 1018 patients.[5,7,8,10,16]

BRISTOL LABORATORIES INC., Syracuse, New York

the unique nitrofurans eliminate

problem pathogens

CASE REPORT: STAPHYLOCOCCAL OSTEOMYELITIS



Severe compound fracture of right foot led to a large, open ulcerated wound on the sole, with tarsal bones exposed and necrotic. Despite extensive debridement, removal of necrotic bone and attempted closure with a pedicle flap, the wound failed to heal and developed considerable purulent drainage.



Culture of pus revealed Staphylococcus aureus, *resistant to all antibiotics tested,* but sensitive to FURACIN. Daily irrigation was instituted, employing 1 part of FURACIN Solution to 4 parts normal saline. Depths of the wound were reached with a long #20 needle on a 20 cc. syringe.



Purulent drainage decreased considerably within a few days, stopped completely after 2 weeks of irrigation with FURACIN Solution. The open space beneath the pedicle flap gradually filled with healthy granulation tissue, and 6 weeks after institution of FURACIN treatment, healing was complete.

In clinical use for more than 12 years and today the most widely prescribed single topical antibacterial, FURACIN—like other nitrofurans—remains effective against pathogens which have developed, or are prone to develop, resistance to antibiotics.

FURACIN®
brand of nitrofurazone

Available as Soluble Dressing, Soluble Powder, or Solution. Also in Vaginal and Urethral Suppositories and in special formulations for eye, ear and nose.

Products of
Eaton Research

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Photographs with brief description of your hobby will be welcomed. A beautiful imported German apothecary jar will be sent to each contributor.



AFTERHOURS







Through the years Dr. Ploussard has compiled what amounts to a pictorial history of his family. He got into group photo (second from left) by setting camera on tripod and using self-timing device. Smallest chap is doctor's son, Nick, now 12 years old.

Realizing how necessary it is to have some way of relaxing the tension of today's practice of medicine, I have developed quite a hobby of photography.

I have a 16 m.m. movie camera with all lenses, attachments, tripod, etc.; a Rolleflex camera with all lenses and flash attachments, and a Bell & Howell sound projector. I also have a splicing machine with illuminated sights so I can cut and splice my films and have them edited.

I carry my Rolleflex camera almost everywhere I go and have literally hundreds of good shots of scenery (color and black & white), sports, etc. Needless to say, I enjoy my cameras very much, and highly recommend photography as a hobby (with or without attachments)!

CHARLES N. PLOUSSARD, M.D.
Phoenix, Arizona



in the peptic ulcer diet...

"orange juice several times daily"

affords protection against vitamin C deficiency without untoward effects on ulcer healing

Strub, Talso, and ValDez, in studying gastric response to orange juice, find that when patients with active duodenal ulcers are given 4 oz. orange juice "several times daily" along with "the usual forms of medical management, no prolongation in the healing is noted." (J.A.M.A. 163:1602, 1957)



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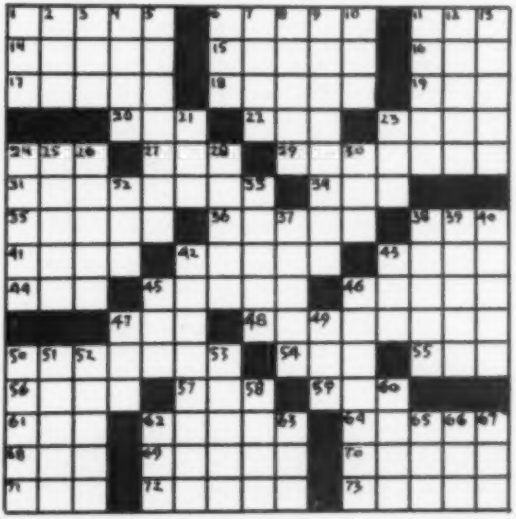
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ORANGES • GRAPEFRUIT • TANGERINES

Medical Teasers

A Challenging Crossword Puzzle for the Physician

(Solution on page 214a)



by Alan A. Brown

ACROSS

1. Pertaining to the kidney
6. Bundle of nerve fibers with same origin and function
11. ... Magnon race of men
14. Within (pref.)
15. Any fluid or semifluid of the body
16. Popliteal region
17. Pulsation (pl.)
18. Adversary
19. Binary compound of a nonmetallic element (suff.)
20. A female
22. Terbium, argon (chem. symbols)
23. Square-rigged vessel
24. Gradual decline
27. Pour in (L., abbr.)
29. A failure of nutrition
31. Organ of voice (pl.)
34. Greasy liquid
35. Carry
36. The trunk without head or extremities
38. Passing fancy
41. Ointment (abbr.)
42. Intrinsic worth
43. Constellation
44. Very small
45. Men
46. Pointed weapon
47. Vehicle
48. Stricture of a duct or canal
50. Used in treatment of diabetes
54. Perceive
55. Nitric acid
56. Contend with
57. Make an incision
59. The lower extremity
61. Three (pref.)
62. Variety of coffee
64. Pancreatic extract
68. Put into practice
69. Pale
70. Gnawed
71. Stool (L., abbr.)
72. College head (pl.)
73. Tendon of a muscle

DOWN

1. Bone extending from vertebra to sternum
2. Unsaturated hydrocarbon (chem. suffix)
3. National Tuberculosis Association (abbr.)
4. Skills
5. Beating
6. Article
7. Dwarf
8. One-celled protozoa
9. Affected with complete loss of consciousness
10. Attempt
11. Bird sound
12. Lines radiating from a center
13. Greek letter
21. England (abbr.)
23. Pill (L., abbr.)
24. The bend of the arm
25. Unit of measure in physics
26. Water saturated with salt
28. Pertaining to unborn offspring
30. River (Span.)
32. Yttrium, niton (chem. symbols)
33. Bottom of the foot (pl.)
37. Forms reddish deposit on metal
38. Unspoiled
39. Once more
40. Pertaining to the back (pref.)
42. Unnaturally swollen: said of a vein
43. Derivation (pref.)
46. Spasmodically expels air through nose
47. Signal
49. Snake-like fish
50. A stroke
51. Pertaining to Scandinavia
52. Discovered
53. Nape of the neck
58. At that time
60. Convolutions of the cerebral cortex
62. Insane
63. Answer (abbr.)
65. One (comb. form)
66. Quality (suff.)
67. Modern

Investigator

after investigator reports

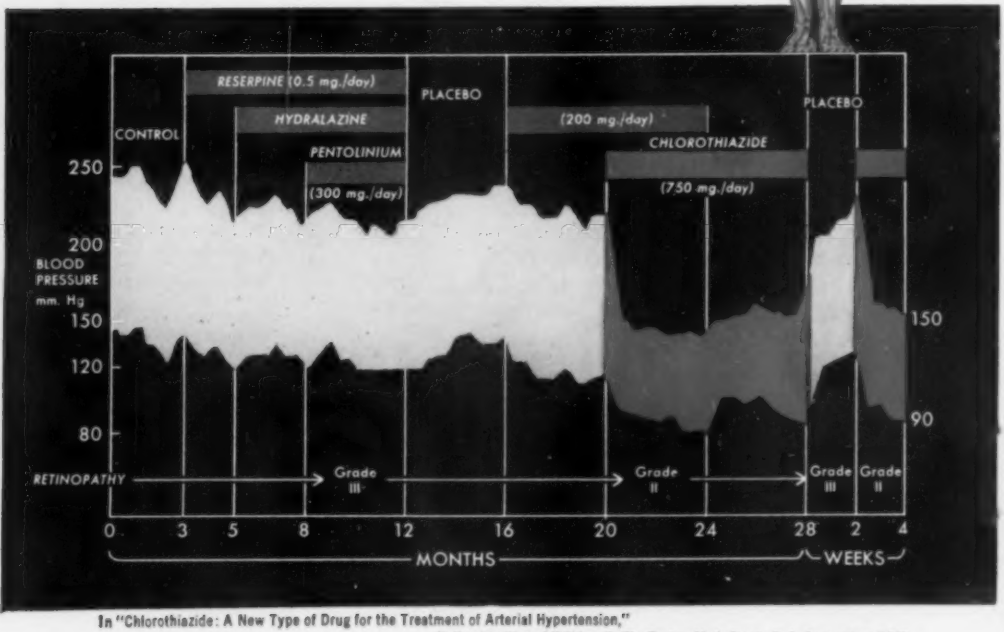
Wilkins, R. W.: New England J. Med. **257**:1026, Nov. 21, 1957.

"Chlorothiazide added to other antihypertensive drugs reduced the blood pressure in 19 of 23 hypertensive patients." "All of 11 hypertension subjects in whom splanchnicectomy had been performed had a striking blood pressure response to oral administration of chlorothiazide." ". . . it is not hypotensive in normotensive patients with congestive heart failure, in whom it is markedly diuretic; it is hypotensive in both compensated and decompensated hypertensive patients (in the former without congestive heart failure, it is not markedly diuretic, whereas in the latter in congestive heart failure, it is markedly diuretic). . . ."

Freis, E. D., Wanko, A., Wilson, I. H. and Parrish, A. E.: J.A.M.A. **166**:137, Jan. 11, 1958.

"Chlorothiazide (maintenance dose, 0.5 Gm. twice daily) added to the regimen of 73 ambulatory hypertensive patients who were receiving other antihypertensive drugs as well caused an additional reduction [16%] of blood pressure." "The advantages of chlorothiazide were (1) significant antihypertensive effect in a high percentage of patients, particularly when combined with other agents, (2) absence of significant side effects or toxicity in the dosages used, (3) absence of tolerance (at least thus far), and (4) effectiveness with simple 'rule of thumb' oral dosage schedules."





In "Chlorothiazide: A New Type of Drug for the Treatment of Arterial Hypertension," Hollander, W. and Wilkins, R. W.: Boston Med. Quart. **8**: 1, September, 1957.

MERCK SHARP & DOHME Division of MERCK & CO., Inc., Philadelphia 1, Pa.

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the effectiveness of 'DIURIL'
(CHLOROTHIAZIDE)

in

Hypertension

as simple as 1-2-3

1 **INITIATE THERAPY WITH 'DIURIL'.** 'DIURIL' is given in a dosage range of from 250 mg. twice a day to 500 mg. three times a day.

2 **ADJUST DOSAGE OF OTHER AGENTS.** The dosage of other antihypertensive medication (reserpine, veratrum, hydralazine, etc.) is adjusted as indicated by patient response. If the patient is established on a ganglionic blocking agent (e.g., 'INVERSINE') this should be continued, but the total daily dose should be immediately reduced by as much as 25 to 50 per cent. This will reduce the serious side effects often observed with ganglionic blockade.

3 **ADJUST DOSAGE OF ALL MEDICATION.** The patient must be frequently observed and careful adjustment of all agents should be made to determine optimal maintenance dosage.

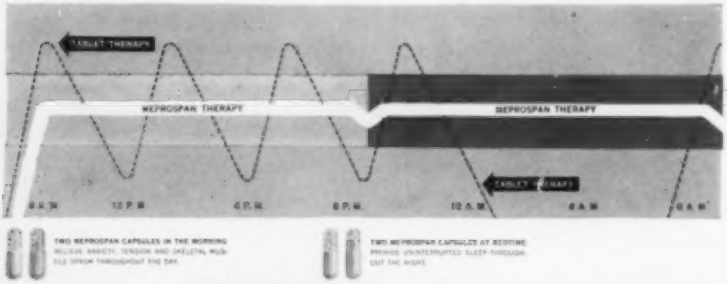
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'DIURIL' is a trade-mark of Merck & Co., Inc.

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New...
meprobamate prolonged release capsules

Evenly sustain relaxation of mind and muscle 'round the clock



TWO MEPROSPAN CAPSULES IN THE MORNING RELIEVE ANXIETY, TENSION AND SKELETAL MUSCLE SPASM THROUGHOUT THE DAY.

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MEPROBAMATE IN **PROLONGED RELEASE** CAPSULES

- maintains constant level of relaxation
- minimal side effects
- simplifies patient's dosage schedule

Dosage: Two Meprospan capsules q. 12 h.
Supplied: Bottles of 30 capsules.
Each capsule contains:
Meprobamate (Wallace) ..... **200 mg.**
2-methyl-2-n-propyl-1,3-propanediol dicarbamate

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6 essential vitamins
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booklet for distribution to mothers. Space provided for physician formula and feeding instructions and vitamin specifications; also formula preparation instructions (both terminal heating and aseptic method). When ordering, specify Dextri-Maltose or Lactum version.

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Formula—available for any Mead Johnson product: include preparation specification.
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Hypoallergenic soya formula

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you provide a hypoallergenic formula well tolerated in milk sensitivity.

Eczema, colic and other symptoms of milk allergy are usually relieved promptly. The pleasant bland taste and "milk-like" color are readily accepted. Sobee needs no added carbohydrate—only water—for well tolerated, growth-supporting feedings.

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Who Is This Doctor?

He was born December 14, 1503, in San Remy, France, where he was christened Michel. His maternal and paternal grandfathers were physicians; one was physician to Rene, King of Jerusalem and Sicily, the other to Rene's son, Jean, Duke of Calabria. Both tutored him. Their teaching and his interest soon carried him to knowledge far beyond his years.

He entered the University of Avignon where he was put in charge of the astronomy class as a student-teacher; a traditional honor for a brilliant scholar. Later, he enrolled at the Faculte de Medicin in Montpellier, the most famous university for scientific study in France at the time. Shortly after, a plague broke out forcing the university to close.

As a medical student he fought the plague so successfully for four years that when he returned to school to take his exams, students demanded him for their teacher.

Passing his orals and defending his thesis he was formally invested in the brotherhood of Hippocrates as a Doctor of Medicine, October 23, 1529.

For many years he engaged in a wandering practice that followed a pattern of need and invitation. He was much honored in the districts where he labored, the universities where he had taught, and at the Court of France where he was often in attendance.

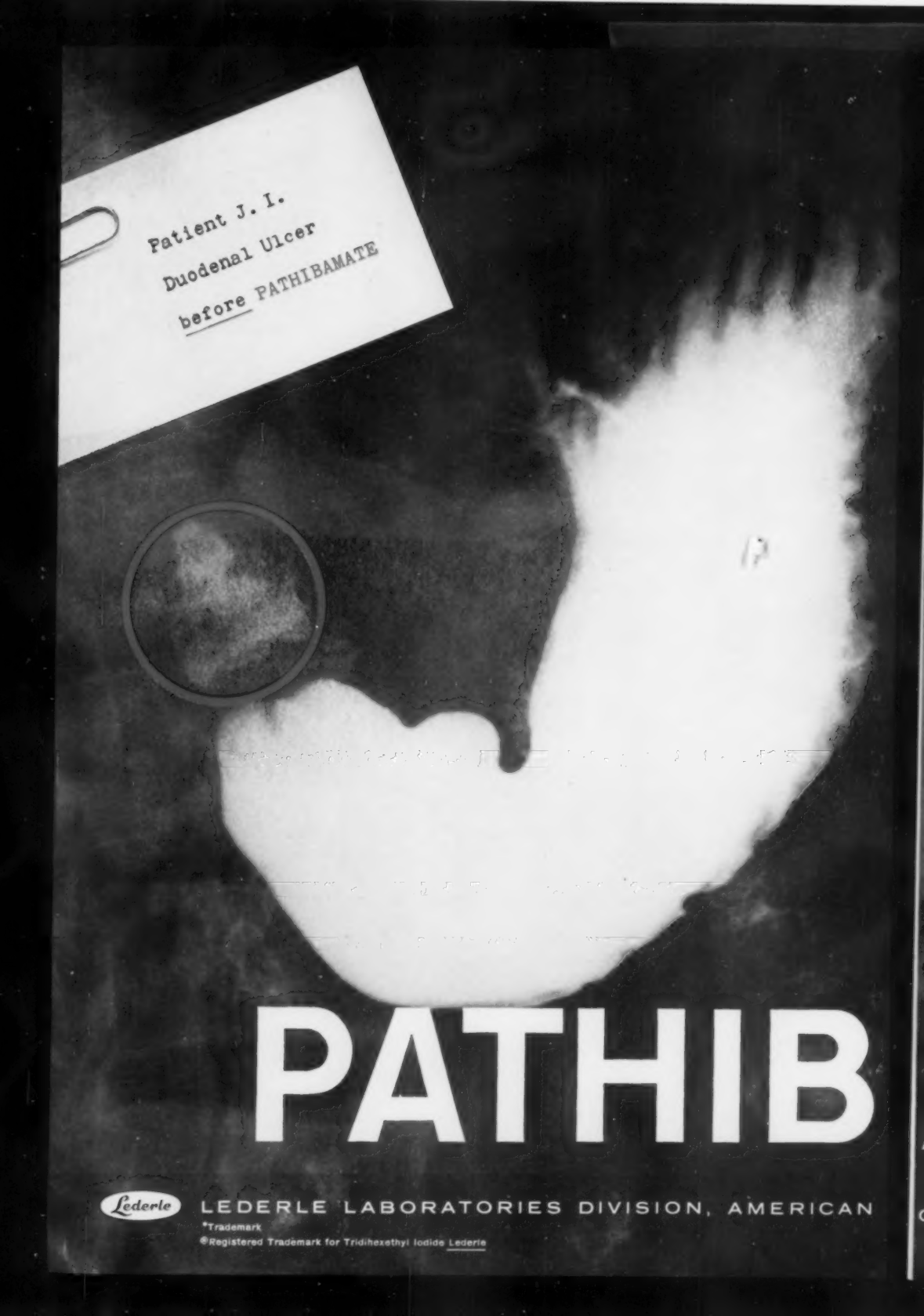
He published a book of prophecies in rhyme, *Centuries*, (1555) in which, under the guise of symbols, the contending powers of Europe enact destiny. Here, the author summarized the developments of the next four centuries.

He also wrote almanacs which were so much in demand that they were pirated by others and bogus ones were issued under his name.

However, the single book, *Centuries*, aroused great interest; it gained him many friends and perhaps as many foes. The book has been reprinted again and again, and each time it appears, the author is either damned as a charlatan or praised as a prophet.

It had a large publishing revival during World War II with the same reaction.

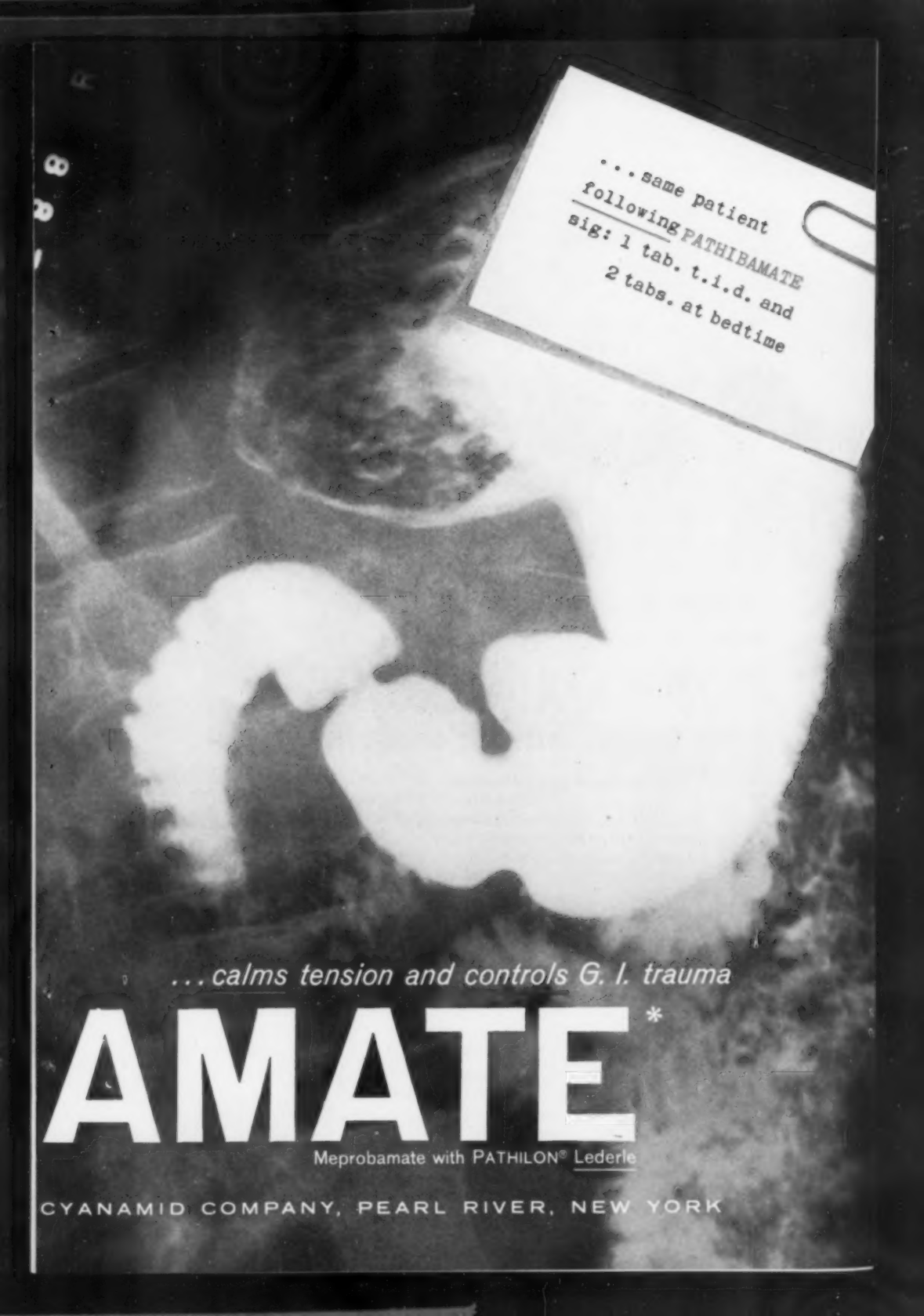
Can you name this doctor who died July 2, 1566, without turning to page 194a?



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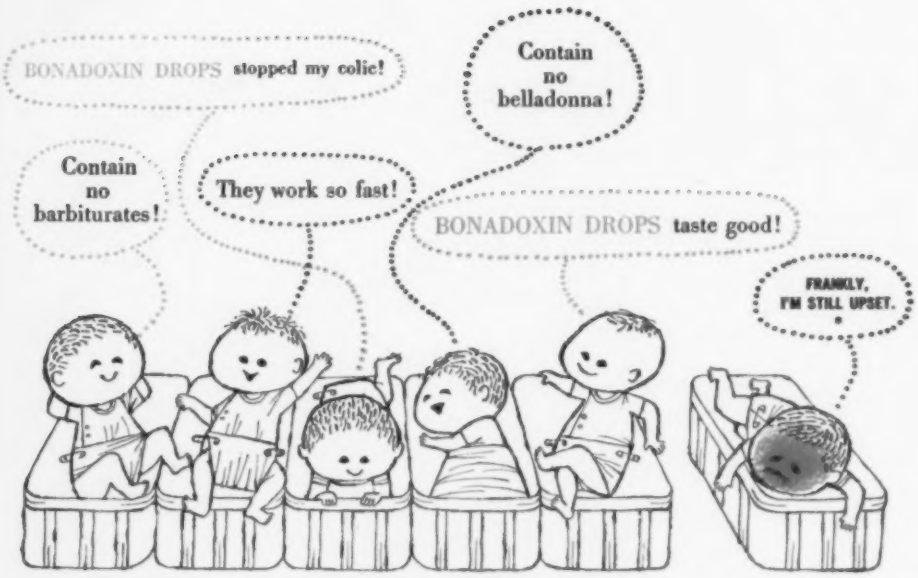


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STOP COLIC...WITHOUT NARCOTICS

When you prescribe BONADOXIN DROPS *you make everybody happy:*

- *baby* gets peaceful sleep, freed of cramps and colic (*BONADOXIN DROPS stop infant colic in 84%[1-3])
- *Mom and Dad* get a vacation from frayed nerves (BONADOXIN DROPS are "effective almost immediately"[4])
- you avoid the risk of belladonna and barbiturates (BONADOXIN DROPS are well-tolerated[1-4])

Next time you get the "colic call," try BONADOXIN DROPS

Each cc. contains: meclizine dihydrochloride . . . 8.33 mg.
pyridoxine hydrochloride . . . 16.67 mg.

dosage:

under 6 months	0.5 cc.	2 or 3 times daily, on the tongue, in fruit juice or water
6 months to 2 years	1.5 to 2 cc.	
2 to 6 years	3 cc.	
adults and children over 6 years	1 teaspoon (5 cc.)	

supplied: *Fruit-flavored, clear green syrup in 30 cc. dropper bottles.*

references: 1. Dougan, H. T.: Personal communication. 2. Leonard, C. L.: Personal communication. 3. Steinberg, C. L.: Personal communication. 4. Litchfield, H. R.: Arch. Pediat. 73:229 (July) 1956.

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LETTERS
To The Editor

This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers who are invited to comment on controversial subjects, names will be omitted when requested.

Appreciation

First, I want to thank you profusely for including my name on your subscription list this past year. Your publication is one of the few which I read from cover to cover and my file is filled with articles I have clipped and found extremely useful in my general practice.

Secondly, you ran a series of articles on foreign language common medical expressions, which I did not have the foresight to clip. Can you possibly send me a reprint of the Spanish, French and Italian lists? I would be extremely grateful for these as I find my high school preparations in these subjects completely inadequate.

Thank you again.

R.I.L., M.D.,
Kew Gardens 15, New York

Reprints going under separate cover.
—Ed.

I thank you very much for putting my name on your mailing list for MEDICAL TIMES. I read your timely articles eagerly and the information thus garnered is so valuable in my practice.

—Continued on page 56a

logical therapy for the constipated patient

Past 40

Treatment should afford not only symptomatic relief, but should also control the often coexisting biliary dysfunction and faulty absorption. Patients suffering with biliary or hepatic disorders in whom there is inadequate bile flow are generally constipated. Chobile is *biliary* therapy—contains no cathartics.

CHOBILE®

Chobile is a logical treatment for biliary constipation. It increases motility of the intestinal tract, helps prevent stool dehydration by maintaining colon water balance. Each Chobile tabule contains 1½ gr. Cholic acid plus 1½ gr. Ketocholanic acids.

Neisler Irwin, Neisler & Co. • Decatur, Illinois

—Continued from page 55a

"The Men Who Made the Medicine" is a series of particular interest to me because the History of Medicine is my hobby. Is it possible for you to send me either the March issue Vol. 86 No. 3 of MEDICAL TIMES, or if one is unavailable perhaps a reprint of the first article in that historical series.

Another timely topic is "Prescription for Travel." The second article of the series which I enjoyed reading today was full of useful facts. I would have liked to read the first article in this series.

W.L., M.D.,
Brooklyn, New York

Copy on its way—Ed.

Population

Dr. Long's editorial in the March issue concerning the population of our country as projected for 1975 was enlightening. A little frightening, too.

Predictions such as sixteen million high school students (twice the number today) and nine million college students (three times the present total) should give us pause for thought. It seems to me that plans for handling this problem should be underway now. And so should plans for providing the estimated 300,000 physicians needed in 1975.

F.O., M.D.
Los Angeles, Calif.



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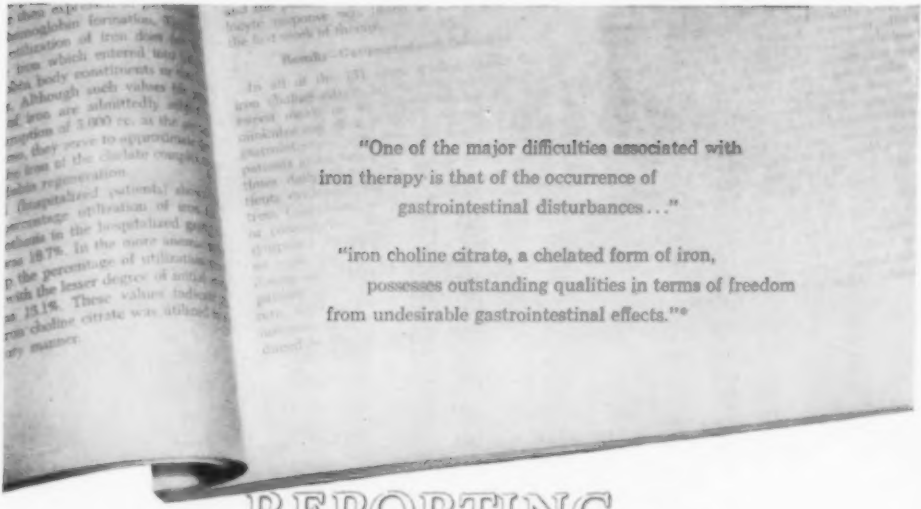
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"One of the major difficulties associated with iron therapy is that of the occurrence of gastrointestinal disturbances..."

"iron choline citrate, a chelated form of iron, possesses outstanding qualities in terms of freedom from undesirable gastrointestinal effects."*

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new freedom from g.i. distress in oral iron therapy—through the chemistry of chelation

chelate iron therapy with*

FERROLIP®

(Iron Choline Citrate)

the new chemohematinic for oral iron therapy... notably effective... exceptionally well tolerated... unusually safe even on accidental overdosage

TABLETS —3 FERROLIP Tablets supply 1.0 Gm. iron choline citrate,† equiv. 120 mg. elemental iron, 360 mg. choline base. Bottles of 100, 1000.

SYRUP—1 fl.oz. FERROLIP Syrup provides 120 mg. elemental iron, equiv. 3 tablets. Pints, gallons.

PEDIATRIC DROPS —Each cc. FERROLIP Pediatric Drops provides 16 mg. elemental iron, 48 mg. choline base. In 30-cc. unbreakable plastic squeeze bottles.

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Bottles of 100, 1000 capsules. Also FERROLIP plus Liquid, in 8-fl.oz., pint, and gallon bottles.

Flint, EATON & COMPANY
Decatur, Illinois

*Franklin, M., et al.: Chelate Iron Therapy, J.A.M.A. 166:1685, Apr. 5, 1958.
†U.S. Pat. 2,575,611

92% EFFECTIVE

HIGH POTENCY

In 602 cases[1]

LOW SEDATION

99% FREE OF DROWSINESS

Virtually no daytime restriction

the newest type of

ANTIHISTAMINE

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Brand of Isothipendyl hydrochloride

CHALLENGES COMPARISON ON ALL COUNTS

1. HIGH POTENCY — successful in 554 of 602 cases.[1]
2. LOW SEDATION — no drowsiness in 598 patients.[1]
3. WIDE RANGE — effective in various respiratory and topical allergies.[1]
4. NO TOXICITY — no report of toxic effects in 2,686 cases.[1-3]
5. LESS RESTRICTIVE — equally free from sedation in adults and children. Negligible limitation against patients' operating vehicles or machinery.

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"THERUHISTIN" ***Syrup,*** 2 mg. per 5 cc. (tsp.), bottles of 16 fluidounces. Also available — "THERUHISTIN" TABLETS, 4 mg., bottles of 100 and 1,000.

1. New and Unused Therapeutics Committee, Am. Coll. Allergists: Interim Report at Thirteenth Annual Congress, Mar. 20-22, 1957, Chicago, Ill., Ann. Allergy, to be published. 2. von Schlichtegroll, A.: Arzneimittel-Forsch. 7:237 (Apr.) 1957. 3. Spielman, A. D.: New York J. Med. 57:3329 (Oct. 15) 1957.

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FALVIN Capsules are fully efficient not only in patients with severe anemias, but also in the wide range of patients with marginal and incipient deficiencies—convalescents, geriatric patients, adolescents, and the many listless, easily-fatigued individuals. FALVIN with AUTRINIC consistently enhances absorption of the Vitamin B_{12} component. As a result of this across-the-board effectiveness, FALVIN is the oral hematinic you can depend on completely *whenever a hematinic is indicated!*

Dosage: One capsule twice daily.

Each FALVIN capsule contains:

*Autrinic** Intrinsic Factor Concentrate with Vitamin B_{12}	1 U.S.P. Oral Unit
Ferrous Sulfate Exsiccated	300 mg.
Ascorbic acid (C)	75 mg.
Folic Acid	1 mg.

*Reg. U. S. Pat. Off.

Lederle

for the common anemias in their many phases

FALVIN*

Hematinic Lederle

with AUTRINIC*

Intrinsic Factor Concentrate with B_{12}

LEDERLE LABORATORIES
a Division of
AMERICAN CYANAMID COMPANY
Pearl River, New York



Mediquiz

These questions are from a civil service examination recently given to candidates for physician appointments in municipal government. Like to see how you would fare? Answers will be found on page 68a.

1. In making a diagnosis of malaria, the best time to find the parasite in the blood stream is: (A) during a chill; (B) just before a chill; (C) Immediately after a chill; (D) twenty-four hours after a chill.

2. The red cells of a malaria patient often reveals: (A) normochromic anemia; (B) a microcytic hemolytic anemia; (C) a macrocytic hemolytic anemia; (D) normal.

3. The parasite may be seen in malaria: (A) within the erythrocyte; (B) within the leukocyte; (C) within the leukocyte nucleus; (D) as extracellular.

4. Which of the following has been encountered in Northern United States: (A) P. vivax; (B) P. falciparum; (C) P. malariae; (D) P. ovale.

5. Varicella (chickenpox) is a disease due to a virus that is closely related to: (A) smallpox; (B) herpes zoster; (C) herpes simplex.

6. An unusual contraindication to smallpox vaccination is: (A) allergy to cows milk; (B) allergy to eggs; (C) the presence of psoriasis in the patient or his family; (D) the presence of eczema in the patient or his family.

7. The best single aid in making a diagnosis of allergy is: (A) skin testing; (B) complete history and physical examination; (C) finding eosinophiles in the peripheral blood.

8. Which of the following is not a typical finding in the blood picture in allergic conditions: (A) under 3% eosinophiles; (B) under 6% eosinophiles; (C) under 9% eosinophiles; (D) over 20% eosinophiles.

9. In the etiology of asthma, endogenous factors play the more important role in the age group: (A) under 5 years; (B) 5-15 years; (C) 15-35 years; (D) above 35 years.

10. Most patients with gout have blood findings of: (A) increased calcium; (B) decreased calcium; (C) increased

—Continued on page 64a

for sure antibacterial control

in urinary tract infections

mandelamine

It's effective against almost all types of urinary tract organisms . . . controls even antibiotic and sulfonamide-resistant bacteria. Yet, Mandelamine is *not* an antibiotic! Mandelamine won't sensitize patients . . . no resistant bacterial strains develop . . . side effects are minimal. Mandelamine is one of the safest of all drugs for prolonged use, and—happily for patients—costs far less than other antibacterial agents!

safe for long-term use for all ages

Supplied in Hafgrams® (0.5 Gm. tablets), 0.25 Gm. tablets, and pleasantly flavored Mandelamine Suspension for pediatric use. Adults take an initial daily dose of 4 to 6 Gm., and can be maintained on 3 Gm. daily indefinitely. Children need as little as 1 Gm. daily. (Mandelamine Discs, for quick identification of Mandelamine-sensitive bacteria, available from your laboratory supply house.)

safe and effective for chronic urinary tract infections

MANDELAMINE®

Brand of methenamine mandelate formerly a product of Nepera Laboratories

WARNER-CHILCOTT



chemically different · pharmacologically unique
clinically distinctive

- prompt and predictable action

  Tablets: work overnight without disturbing sleep;[1-9] taken before breakfast, act within six hours

  Suppositories: produce evacuation in 15-60 minutes[6-9]

- acts directly on colonic mucosa[10]
- virtually no contraindications[1-13]
- very well tolerated[1,3,5,9,11-13]

dosage: Tablets: One to 3 (usually 2) at bedtime for bowel movement the following morning, or ½ hour before breakfast for a movement within six hours.
Suppositories: One at time bowel movement is required.

supplied: DULCOLAX® (brand of bisacodyl). Yellow enteric-coated tablets of 5 mg. in boxes of 6 and bottles of 100. Suppositories of 10 mg. in boxes of 6. Under license from C. H. Boehringer Sohn, Ingelheim.

acts directly on colonic mucosa
does not depend on systemic absorption

references
(1) Foertsch, A.: Deutsche med. Wchnschr. **78**:916, 1953. (2) Frankl, R.: Medizinische **No.** 49:1587 (Dec. 5) 1953. (3) Krueger, H. H., and Piegsa-Quischotte, I.: Aerztl. Wchnschr. **8**:891 (Sept. 11) 1952. (4) Scheel, M.: Hippokrates **26**:624, 1955. (5) Stockmeier, F.: Muenchen. med. Wchnschr. **95**:1058, 1953. (6) Ganz, P., and Zindler, M.: Medizinische **No.** 29/30:1042, 1955. (7) Kolshorn, R.: Muenchen. med. Wchnschr. **98**:949, 1954. (8) Clark, A. N. G.: Brit. M. J. **2**:866 (Oct. 12) 1957. (9) Aue, H.: Medizinische **No.** 3:118, 1954. (10) Schmidt, L.: Arzneimittel-Forsch. **3**:19, 1953. (11) Barth, H.: Deutsches med. J. **4**:415 (Aug. 15) 1953. (12) Brandt, G., and Brandt, W.: Landarzt **30**:589, 1954. (13) Vieth, H.: Therap. Gegenw. **94**:60, 1955.

GEIGY
ARDSLEY, NEW YORK

93250

—Continued from page 61a

uric acid level; (D) decreased uric acid level.

11. The blood uric acid level: (A) rises during an attack of gout; (B) decreases during an attack; (C) is not altered by an attack.

12. The urinary uric acid is affected by an attack of gout by: (A) rising before and decreasing after attack; (B) rising before and remaining elevated after attack; (C) decreasing before and rising after attack; (D) decreasing before and remaining low after attack.

13. In rickets, the typical blood findings are: (A) decreased serum phosphate, increased serum phosphotase and increased calcium; (B) decreased serum phosphate, decreased serum phosphotase and normal calcium; (C) increased serum phosphate, decreased serum phosphotase and normal calcium; (D) decreased serum phosphate, increased serum phosphotase and normal calcium.

14. The laboratory findings in hypoparathyroidism are: (A) high serum phosphorus, low serum calcium, minimal or absent urinary calcium; (B) high serum phosphorus, low serum calcium increased urinary calcium; (C) low serum phosphorus, high serum calcium, increased urinary calcium.

15. The typical findings in Addison's disease are: (A) decrease in serum sodium, decrease in serum potassium, decrease in blood sugar; (B) increase in serum sodium, increase in serum potassium, increase in blood sugar; (C) decrease in serum sodium, increase in serum potassium, decrease in blood sugar.

16. The most common cause of tetany clinically is: (A) hyperparathyroidism; (B) hypoparathyroidism; (C) hypoventilation; (D) hyperventilation.

17. The most common cause of obesity is: (A) hypothyroidism; (B) hypopituitarism; (C) over-eating; (D) Frohlich's syndrome.

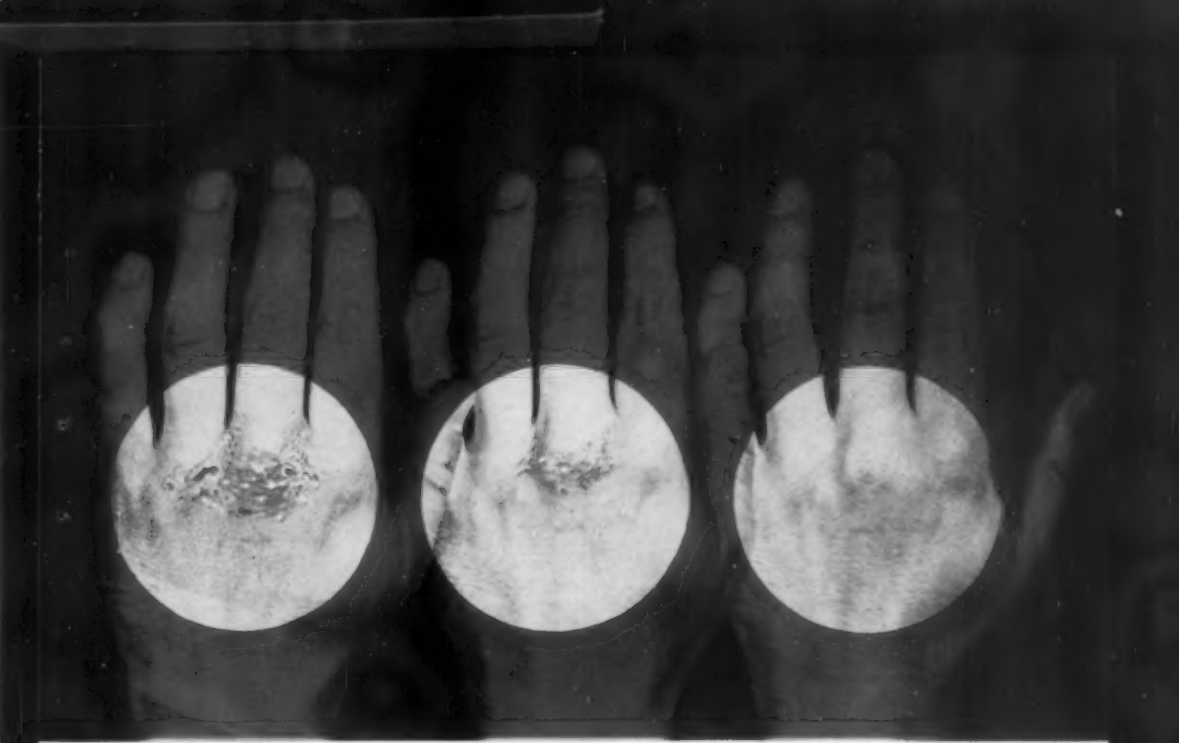
18. Funduscopic findings of retinal hemorrhages in a child with a 6 week history of a head injury should make one suspicious of: (A) epidural hemorrhage; (B) subdural hemorrhage; (C) subarachnoid hemorrhage; (D) skull fracture.

19. Spinal tap may occasionally be used therapeutically in the treatment of: (A) epidural hemorrhage; (B) subdural hemorrhage; (C) subarachnoid hemorrhage; (D) skull fracture.

20. In respiratory acidosis the: (A) serum bicarbonate is decreased and pH is decreased; (B) serum bicarbonate is increased and pH is increased; (C) serum bicarbonate is not important and pH is decreased; (D) serum bicarbonate is not important and pH is increased.

21. In metabolic alkalosis: (A) serum bicarbonate is decreased and pH is decreased; (B) serum bicarbonate is in-

—Concluded on page 68a



you can clear topical infections promptly with

NEO-POLYCIN*

...because Neo-Polycin provides 3 preferred topical antibiotics

NEOMYCIN / BACITRACIN / POLYMYXIN

in the unique Fuzene® base which releases greater antibiotic concentrations than do ordinary grease-base ointments.

NEO-POLYCIN covers the entire range of bacteria most often found in topical lesions...has a low index of sensitivity...averts the risk of sensitization to lifesaving antibiotics, since the antibiotics used in Neo-Polycin are rarely used systemically...is miscible with blood, pus and tissue exudates without loss of efficacy.

Each gram of Neo-Polycin Ointment contains 3 mg. of neomycin, 8000 units of polymyxin B sulfate and 400 units of bacitracin in the unique Fuzene (polyethylene glycol diester) base. Supplied in 15 Gm. tubes. Also supplied as Neo-Polycin Ophthalmic Ointment (anhydrous, lanolin-petrolatum base) in ⅛ oz. tubes.

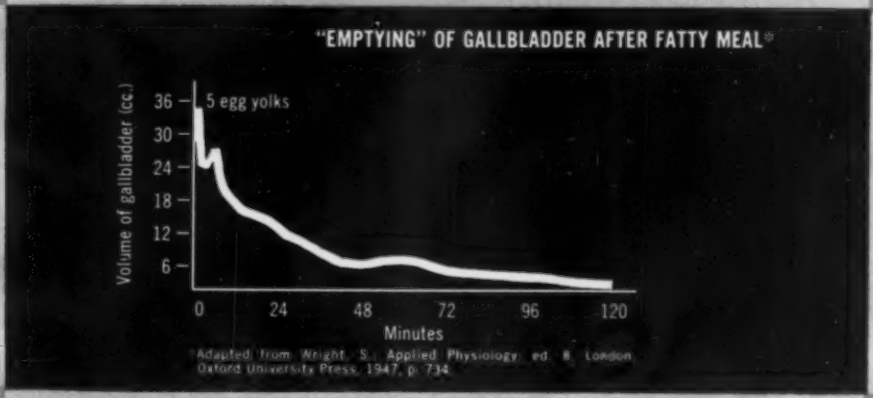
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What's wrong with the term "emptying of the gallbladder"?

The gallbladder discharges bile by fractional evacuation. It is not emptied completely at any one time even following a fatty meal.

Source—Lichtman, S. S.: Diseases of the Liver, Gallbladder and Bile Ducts, ed. 3, Philadelphia, Lea & Febiger, 1953, vol. 2, p. 1177.

routine physiologic support for "sluggish" older patients

DECHOLIN® one tablet t.i.d.
therapeutic bile

increases bile flow and gallbladder function—combats bile stasis and concentration... helps thin gallbladder contents.

corrects constipation without catharsis—prevents colonic dehydration and hard stools... provides effective physiologic stimulant.

DECHOLIN tablets (dehydrocholic acid, AMES) 3¾ gr. Bottles of 100 and 500.

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Ames Company of Canada, Ltd., Toronto 44650


hay fever
nonseasonal rhinitis
nasopharyngitis
rhinitis
nasal congestion
weed
out
budding
allergies
with
METRETON
NASAL SPRAY
METICORTELONE plus CHLOR-TRIMETON
unique "Meti" steroid-antihistamine combination
quick nasal clearing—easy breathing within minutes . . . without rebound
shrinks nasal polyps—helps revive sense of smell
prolonged effect—aids drainage, relieves itch, controls discharge . . . lastingly effective
broad range of use—cardiac, hypertensive, pregnant and elderly patients are safe from sympathomimetic vasoconstrictor effects
15 cc. plastic squeeze bottle.
Each cc. of METRETON Nasal Spray contains 2 mg. (0.2%) prednisolone acetate and 3 mg. (0.3 %) chlorprophenpyridamine gluconate in a nonirritating isotonic vehicle.
Schering

severe hay fever, pollen asthma, urticaria
perennial rhinitis, allergic dermatoses



resistant allergies respond to

METRETON TABLETS

METICORTEN *and* CHLOR-TRIMETON *with Ascorbic Acid*

response without fail by the systemic route

METRETON Tablets provide uniquely effective antiallergic, anti-inflammatory benefits in hard-to-control allergies. Added ascorbic acid helps counter stress and prevents vitamin C depletion.

safe and well tolerated

METRETON contains METICORTEN, the steroid that does not cause fluid or electrolyte disturbance in average dosage schedules, and CHLOR-TRIMETON, the antihistamine noted for its remarkable record of safety and effectiveness.

Each METRETON Tablet contains 2.5 mg. prednisone, 2 mg. chlorprophenpyridamine maleate and 75 mg. ascorbic acid.



and for the allergic eye

METRETON OPHTHALMIC SUSPENSION

relieves itching, burning, tearing, edema, congestion

Each cc. of METRETON Ophthalmic Suspension contains 2 mg. (0.2%) prednisolone acetate and 3 mg. (0.3%) chlorprophenpyridamine glycinate.

METRETON, ® brand of corticoid-antihistamine compound.

METICORTELONE, ® brand of prednisolone.

METICORTEN, ® brand of prednisone.

CHLOR-TRIMETON, ® brand of chlorprophenpyridamine preparations.

Met-r-t-n, – brand of corticosteroids.

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NEW THERAPY...TO DEFEAT THE MIGRAINE PARADOX*

'MIGRAL'®

TRADEMARK

- relieves headache
- dispels visual disturbances

and • overcomes nausea and vomiting

*The paradox of migraine – increased nausea due to ergotamine administration – may now be successfully combated with 'Migral'. The recognized benefits of ergotamine and caffeine in 'Migral' are favorably enhanced by the addition of cyclizine hydrochloride, a specific to overcome nausea.

Dosage: 2 to 3 tablets at first warning of an attack, then 1 or 2 tablets every half hour; not more than 6 tablets should be taken for any single attack.

Supplied: 'Migral' tablets, containing ergotamine tartrate 1 mg., 'Marezine'® brand Cyclizine Hydrochloride 25 mg., and caffeine 50 mg.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

—Concluded from page 64a

creased and pH is increased; (C) serum bicarbonate is not important and pH is decreased; (D) serum bicarbonate is not important and pH is increased.

22. The direct Coombs' test is often positive in: (A) Cooley's anemia; (B) congenital hemolytic anemia; (C) acquired hemolytic anemia; (D) sickle cell anemia.

23. Steriods are often helpful in the therapy of: (A) Cooley's anemia; (B) congenital hemolytic anemia; (C) acquired hemolytic anemia; (D) sickle cell anemia.

24. Atropine is strongly contraindicated in a case of suspected: (A) interstitial keratitis; (B) foreign body in the eye; (C) primary glaucoma; (D) acute conjunctivitis.

25. In typhoid fever, the urine and stool culture may not be positive until after the: (A) first week; (B) second week; (C), third week; (D) second month.

26. The encephalitis that offers the best prognosis is that which may follow: (A) measles; (B) chicken-pox; (C) mumps; (D) pertussis.

27. The diagnostic test for myasthenia gravis is an excellent improvement in 30 minutes following a dose of: (A) prostigmin; (B) atropine; (C) adrenalin; (D) neosyneprine.

28. The finding of a wrist drop with an adducted thumb may be an evidence of a: (A) median nerve injury; (B) radial nerve injury; (C) ulna nerve injury.

29. In unilateral conduction deafness, one hears best the vibration of a tuning fork held on the median line of the skull in; (A) the affected ear; (B) the normal ear; (C) both ears equally well; (D) not heard at all.

30. A 45-year-old male is forty-five pounds overweight for his age and height. He has no symptoms and is being examined solely in connection with employment. Several of his urine specimens are tested and show from 0.25% glucose to none at different times and are negative for ketone bodies. A fasting blood sugar (venous) is 160 mgms per 100 cc. The correct way to manage this patient at this stage is to: (A) reduce his weight by diet; (B) reduce his weight by diet and thyroid medication; (C) allow him to follow his usual diet and routine—i.e., no treatment is necessary; (D) use insulin and a diet of the same caloric content as he has been eating habitually (securing urine tests that are sugar-free and blood sugars that are normal).

"MEDIQUIZ" ANSWERS

1 (B), 2 (C), 3 (A), 4 (C), 5 (B), 6 (D), 7 (B), 8 (D), 9 (C), 10 (C), 11 (C), 12 (A), 13 (D), 14 (A), 15 (C), 16 (D), 17 (C), 18 (B), 19 (C), 20 (C), 21 (B), 22 (C), 23 (C), 24 (C), 25 (C), 26 (C), 27 (A), 28 (B), 29 (A), 30 (A).



A choice diet
for the patient
plus Lysine
equals earlier
convalescence

"Shortage of an essential amino acid in the *food* means a shortage of protein in the body."[1] Protein loss is greatly increased during injury, surgery, disease or illness — and the deficiency will progress steadily unless a proper diet is achieved. But appetites seem to lag when they are most necessary, because patients are suffering from pain, anorexia or poor gastrointestinal function. At best they will eat *only* soft cereal products.

Many investigators have shown that "lysine deficiency is the salient lack in the cereal grains."[2] The biologic value of cereal protein can be improved to almost double its tissue building value by the addition of adequate quantities of *lysine* to the accepted diet.

Assure efficient reconstructive nutrition with

Cerofort® tablets

(Critically essential L-lysine with therapeutic amounts of all important vitamins)

The recommended daily dose of 3 Cerofort Tablets —one with each meal—supplies:

L-Lysine Monohydrochloride	790 mg.*
Vitamin A	25,000 U.S.P. units
Vitamin D	1,000 U.S.P. units
Thiamine Mononitrate	10 mg.
Riboflavin	10 mg.
Pyridoxine Hydrochloride	2 mg.
Niacinamide	100 mg.
Calcium Pantothenate	20 mg.
Vitamin B_{12} Activity (Cobalamin)	4 mcg.
Folic Acid	1.5 mg.
Ascorbic Acid	300 mg.

*equivalent to 600 mg. L-lysine

Administration with meals is essential to obtain the maximal benefit of lysine fortification of dietary protein.

Supplied in bottles of 60 tablets.

Also available **Cerofort Elixir**
(L-lysine with therapeutic B vitamins)

References: 1. Flodin, N. W.: Am. Miller & Processor *81*:30 (July) 1953. 2. Block, R. J., in Advances in Protein Chemistry, Anson, M. L., and Edsall, J. T., eds., New York, Academic Press, Inc., 1945, vol. 2, p. 119.

first with lysine White's

WHITE LABORATORIES, Inc.
Kenilworth, N. J.

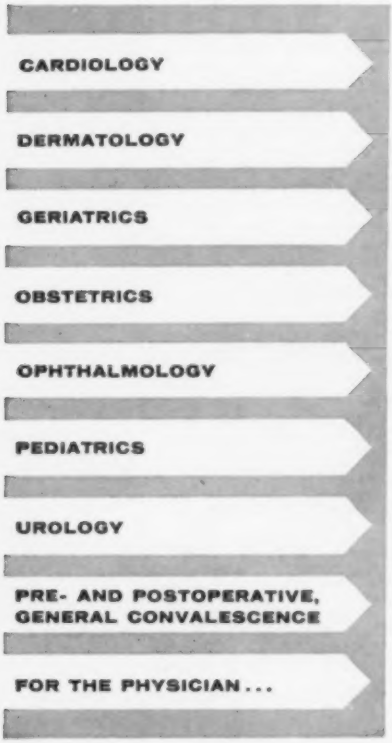
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methyprylon

Roche

the non-barbiturate hypnotic

MEETS THE NEEDS ON ALL SERVICES



when a full night's rest is required regularly

when pruritic lesions interfere with sleep

when sleep should be induced gently and naturally

when fetal respiratory depression must be avoided

when rest and quiet are essential, *e.g.*, following surgery

when barbiturates are undesirable

when mild bladder discomfort, etc., keep the patient awake

when 6-8 hours' sleep is virtually therapeutic

who must awaken in an alert state to the telephone or alarm clock

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MODERN MEDICINALS

These brief résumés of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

A-D-C Drops with Vitamin B_6, Parke, Davis & Co., Detroit, Michigan. Each 0.6 cc. contains 5000 units vitamin A, 1000 units vitamin D, 50 mg. vitamin C, and 1 mg. B_6. Indicated to supplement the infant diet, to aid in preventing infection, and to promote development of the growing child. *Dose:* Infants under 1 year 0.3 cc., older children 0.6 cc. *Sup:* Dropper bottles of 15 cc. and 50 cc.

Acne-Dome, Dome Chemicals, New York, New York. Creme containing sulfur, 2,2′-thiobis (4, 6-dichlorophenol), and resorcinal monoacetate. Indicated for the treatment of acne. *Use:* Apply immediately after washing b.i.d. or t.i.d. *Sup:* 1 oz. Creme and 1 oz. compact, regular or double strength.

Amperone, Kremers-Urban Company, Milwaukee, Wisconsin. Tablets, each containing 0.5 mg. dienestrol, 2.5 mg. methyltestosterone, 30.0 mg. pentobarbital sodium, and 5.0 mg. dextro-amphetamine sulfate. Indicated for relief of menopausal and postmenopausal symptoms complicated by anxiety and tension; also relieves pain and stimulates bone formation in postmenopausal osteoporosis. *Dose:* As directed by physician. *Sup:* Bottles of 60.

Azotrex Syrup, Bristol Labs., Inc., Syracuse, New York. New dosage form, each teaspoonful (5 cc.) of which contains 125 mg. of tetracycline activity and 250 mg. of sulfamethizole. Indicated for treatment of urinary tract infections. *Dose:* As directed by physician. *Sup:* Bottles of 4 oz.

Betadine Antiseptic, Tailby-Nason Co., Inc., New York, New York. A complex of povidone and iodine, offering 1% available iodine. Indicated for disinfection of minor wounds, treatment of burns and skin infections, the oral mucosa and vaginal conditions, topical preparation for injection or surgery. *Use:* Topically, as directed by physician. *Sup:* Bottles of 1 pt.

Cor-Tar-Quin Lotion, Dome Chemicals, New York, New York. Contains hydrocortisone, liquor carbonis detergens, and diiodo-hydroxyquinoline. Indicated for the treatment of various types of skin diseases. *Use:* As directed by physician. *Sup:* ½% and

—Continued from preceding page

1% in bottles of ½ oz., 1 oz., 4 oz.

Cosa-Signemycin, Pfizer Laboratories, Division of Chas. Pfizer & Co., Brooklyn, New York. Capsules, each containing 41.7 mg. oleandomycin as triacetyloleandomycin and 83.3 mg. glucosamine-potentiated tetracycline. Indicated for the treatment of various infections susceptible to the antibiotic combination. *Dose:* As directed by physician. *Sup:* 125 mg. in bottles of 25 and 100, 250 mg. in bottles of 16 and 100.

Deaner, Riker Laboratories, Inc., Los Angeles, California. 2-dimethylaminoethanol as the para-acetamidobenzoic acid salt. Indicated in conditions which may be benefited by a mild stimulant, including neurasthenia and chronic fatigue states, mild depressions and chronic headache. Preliminary indications indicate it may be useful in psychomotor and petit mal epilepsy. *Dose:* Initially, 1 tablet daily in the morning. Usual maintenance dose, 1 to 3 tablets for adults; ½ to 3 tablets for children. *Sup:* 25 mg. scored tablets in bottles of 100 and 500.

Dramamine Liquid, G. D. Searle & Co., Skokie, Illinois. New 3-oz. bottle. Indicated for prevention of travel sickness.

Ergotatropin, Cole Chemical Co., St. Louis, Missouri. Tablets, each containing 1 mg. ergotamine tartrate, 100 mg. caffeine alkaloid, and 1 mg. homatropine methylbromide. Indicated for relief of migraine, histaminic cephalalgia and other types of recurrent, throbbing headaches. *Dose:* two tablets, followed in severe cases by two more tablets half-hour later, then 1 tablet per hour for next two hours.

Fedrazil, Burroughs, Wellcome & Co., Inc., Tuckahoe, New York. Tablets, each containing 30 mg. pseudoephedrine hydrochloride and 25 mg. chlorcylizine hydrochloride. Indicated in the treatment and prophylaxis of respiratory tract congestion and associated allergic manifestations. *Dose:* As directed by physician. *Sup:* Bottles of 100.

Gantrisin Cream, Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey. New package now available with 18 disposable applicators. Indicated in the treatment of vaginal and cervical infections. *Use:* One-half to 1 applicatorful twice daily, in the morning and upon retiring. *Sup:* Package of 3 oz. tube with 18 applicators.

Glestrone, Research Supplies, Albany, New York. Injectable, each cc. of which contains 1 mg. estrone, 25 mg. thiamine hydrochloride, 52.5 ppm. L (+) glutamic acid, 2% benzyl alcohol, 0.5% polyoxyethylene sorbitan mono-oleate, and 0.25% sodium carboxymethylcellulose. Indicated for the treatment of the menopausal syn-

—Continued on page 74a

anginaphobia: *must he live in fear?*

For the angina patient, fear of attack often restricts even *normal* activity. With Peritrate, you can restore confidence and help the patient live more fully—within the limits of his disability.

Peritrate® *20 mg.*

brand of pentaerythritol tetranitrate

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—Continued from page 72a

drome, senile vaginitis, kraurosis vulvae, pruitus vulvae and other conditions in which the use of estrogens are indicated. *Dose:* Intramuscularly, as directed by physician. *Sup:* Vials of 10 cc.

Gluprogest, Research Supplies, Albany, New York. Injectable, each cc. of which contains 10 mg. progesterone, 25 mg. thiamine hydrochloride, 52.5 ppm. L (+) glutamic acid, 2% benzyl alcohol, 0.5% polyoxyethylene sorbitan mono-oleate, and 0.25% sodium carboxymethylcellulose. Indicated for the treatment of habitual or threatened abortion, functional uterine bleeding, female hypogonadism and primary amenorrhea. *Dose:* Intramuscularly, as directed by physician. *Sup:* Vials of 10 cc.

Harmonyl-N, Abbott Laboratories, North Chicago, Illinois. Filmtabs, each containing 0.25 mg. deserpidine and 30 mg. pentobarbital calcium. Indicated for relatively mild type of essential hypertension, also as sedative and tranquilizer in treatment of anxiety, nervousness, tension, excitability, insomnia. *Dose:* As directed by physician. *Sup:* Bottles of 100, 500 and 1,000.

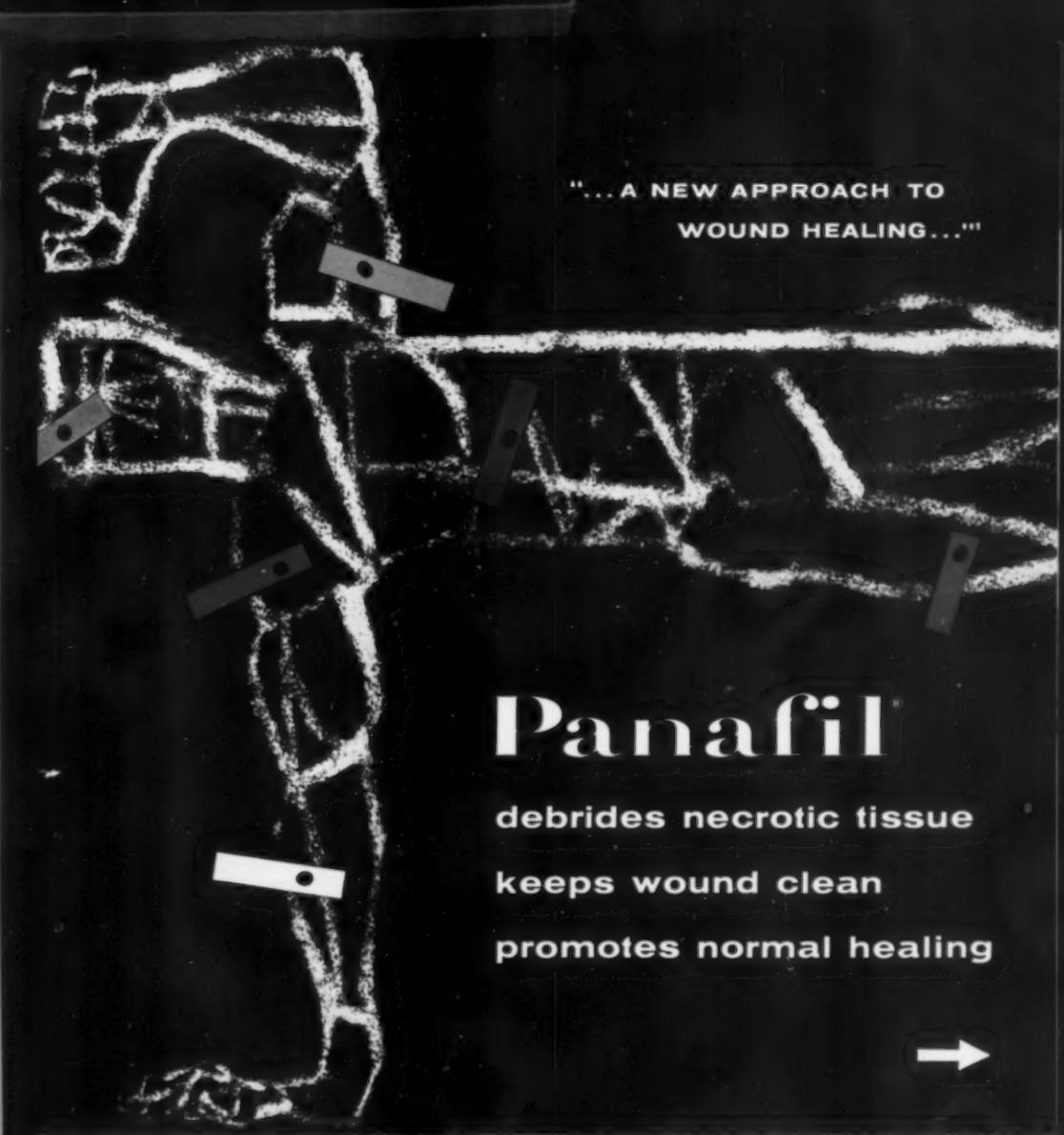
Kwell Shampoo, Reed & Carnrick, Jersey City, New Jersey. Contains 1% gamma benzene hexachloride in a shampoo base. Indicated for the rapid, esthetic treatment of ectoparasitic infestations with pediculosis capitis and phthirius pubis. *Use:* As directed by physician. *Sup:* Bottles of 2 oz. and 16 oz.

Lofenalac, Mead Johnson & Company, Evansville, Indiana. Low phenylalanine content with balanced group of dietary nutrients. Indicated for the dietary management of phenylketonuria, a hereditary disease which causes mental retardation in children. *Dose:* As directed by physician. *Sup:* Powder form, to be mixed with water, in 2½ lb. cans.

Medache, Organon Inc., Nutley, New Jersey. Tablets, each containing 44 mg. phenyltoloxamine dihydrogen citrate (equiv. to 25 mg. phenyltoloxamine), 150 mg. salicylamide, 150 mg. acetophenetidin, and 32 mg. caffeine. Indicated for the relief of pain and anxiety of non-vascular (tension) headaches; fever, pain and discomfort of colds and upper respiratory infections; neuralgia; dysmenorrhea; sinusitis; hay fever and other allergic reactions and dental pain. *Dose*: As directed by physician. *Sup*: Bottles of 100.

Medrol 2 mg., The Upjohn Company, Kalamazoo, Michigan. New size to permit more exact dose adjustment. Indicated for various rheumatic, allergic, dermatologic, ocular and other conditions known to be responsive to the anti-inflammatory corticosteroids. *Dose:* As directed by physician. *Sup:* Bottles of 30 and 100.

—Continued on page 82a



"...A NEW APPROACH TO WOUND HEALING..."

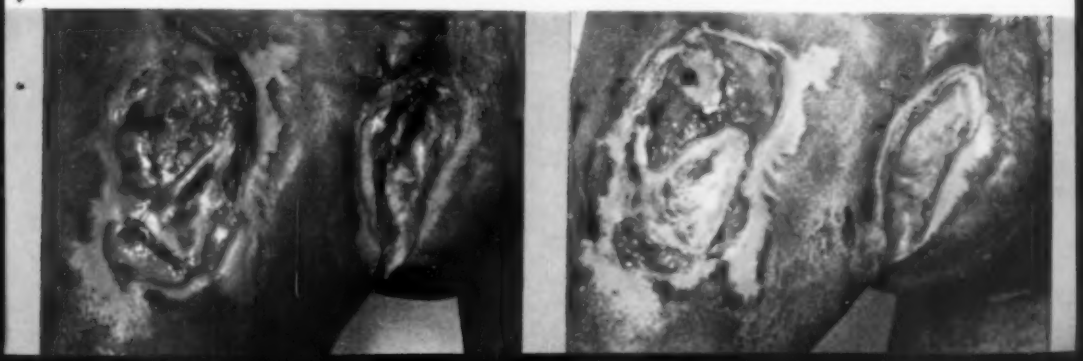
Panafil

debrides necrotic tissue

keeps wound clean

promotes normal healing

Left: Massive infected decubitus ulcers in paraplegic patient before start of PANAFIL therapy.
Right: After 8 days of PANAFIL therapy, wounds were effectively debrided and beginning to heal.



combines enzymatic debridement with continuous healing action

Panafil® OINTMENT

"PROPER USE OF PANAFIL OINTMENT WILL RESULT IN A SAVING OF TIME IN WOUND REPAIR."[2]

PANAFIL Ointment permits more effective treatment of infected or necrotic wounds, through a new combination of cleansing and healing ingredients. The proteolytic enzyme papain, with the protein solvent urea, removes necrotic tissue and other debris from the wound. This process helps restore normal capillary and lymphatic circulation and eliminates the source of secondary infection. Clinical trials[1-6] show that the proteolytic ingredients maintain a clean wound base while chlorophyll derivatives promote healthy granulations.

- **SAFE**—"...does not disturb the viable tissue..."[1]
- **CONVENIENT**—PANAFIL is applied directly from the tube, is ideally suited for office or home use
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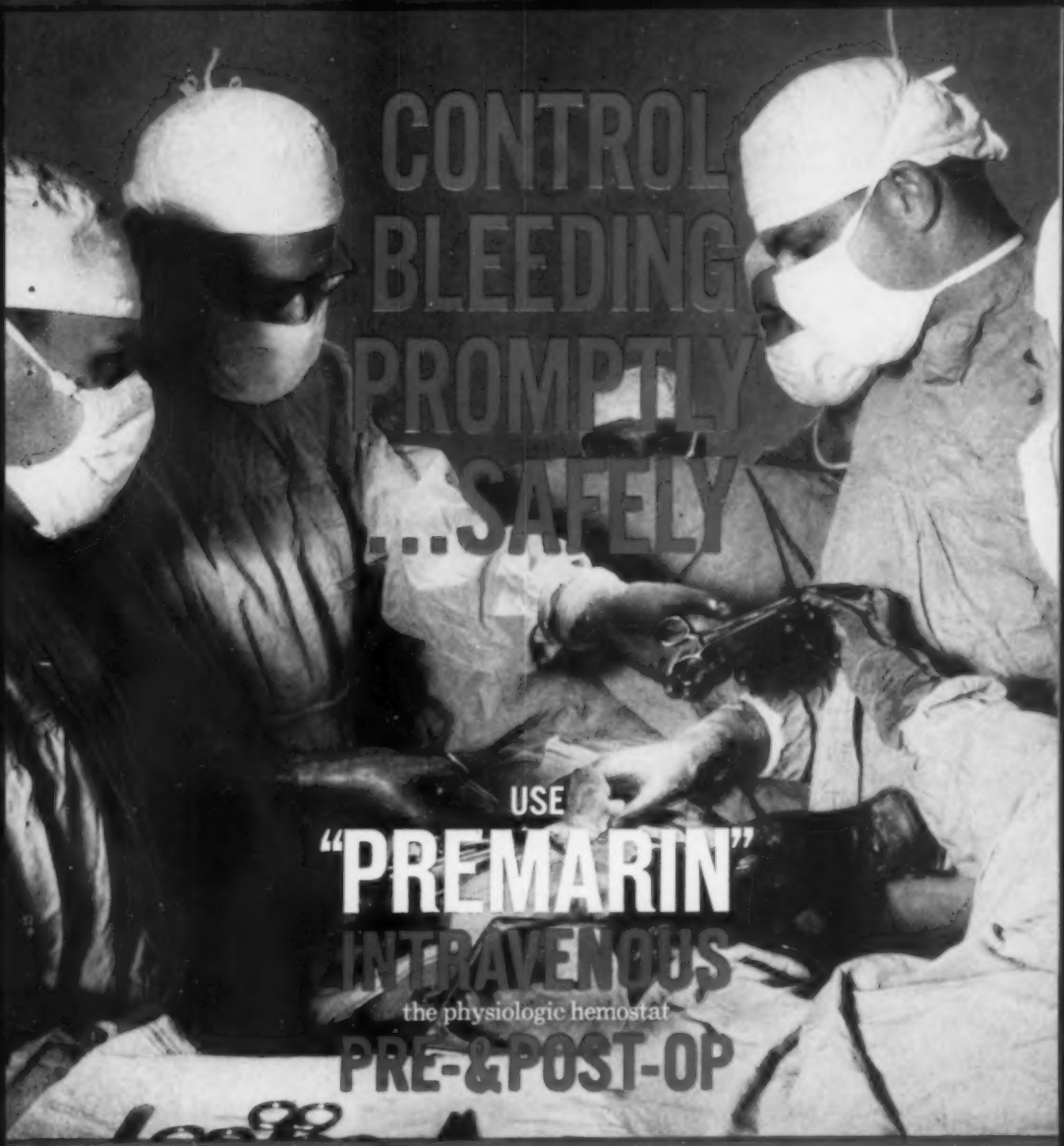
PANAFIL Ointment contains papain 10%, urea U.S.P. 10%, and water-soluble chlorophyll derivatives, N.N.R. 0.5% in a hydrophilic ointment base. Available *on prescription only* in 1-ounce and 4-ounce tubes.

References: (1) Miller, E. W.: New York J. Med. 56:1446, 1956. (2) Miller, J.: Postgrad. Med., to be published. (3) Byrne, J. J.: Am. J. Surg., to be published. (4) Garnes, A. L., and Barnard, R. D.: Angiology 8:13, 1957. (5) Morrison, J. E., and Casali, J. L.: Am. J. Surg. 93:446, 1957. (6) Wood, O. H.: Maryland M. J., in press. PHOTOGRAPHS COURTESY OF V. A. HOSPITALS, FT. HOWARD, MD. AND EAST ORANGE, N. J.

SAMPLES ON REQUEST FROM Rystan company MOUNT VERNON, NEW YORK

Left: Partial third degree burn involving both surfaces of four fingers, infected on admission. Wound cleaned and healing progressed rapidly under PANAFIL treatment. *Right:* Healing almost complete by 18th day without skin grafting. New skin soft and elastic. Normal function completely restored.





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1. Bjorn, J., Jr.: Diseases Ophth. & Otolaryng. 20:25 (Nov.) 1957. 2. Wenzel, F.: Ibid., p. 5. 3. Sarwer, H. M., and Shapiro, F.: Ibid., p. 10. 4. Monger, H. G.: J.A.M.A. 159:146 (Oct. 8) 1955.

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You can take advantage of buccal vascularity for rapid, efficient, thorough absorption of androgen. Metandren Linguets offer the therapeutic equivalent of intramuscular androgen, without painful injections, local reactions, irregular doses or lost working hours.

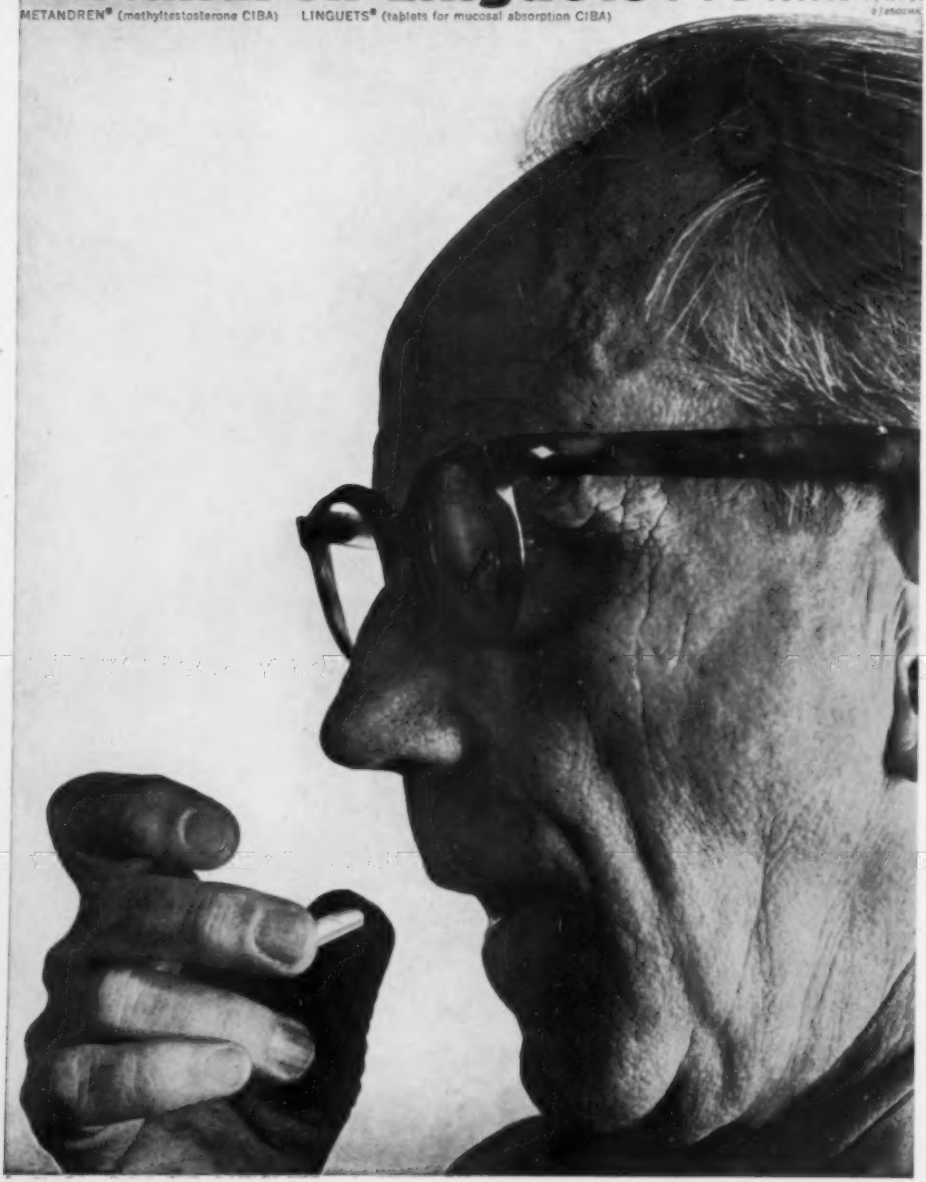
In Males climacteric, impotence, angina pectoris. **In Females** menopause, frigidity, premenstrual tension and dysmenorrhea, functional uterine bleeding. **In Both** for anabolic effects and chronic debility after: severe injury, prolonged illness, major surgery, severe malnutrition, severe infection.

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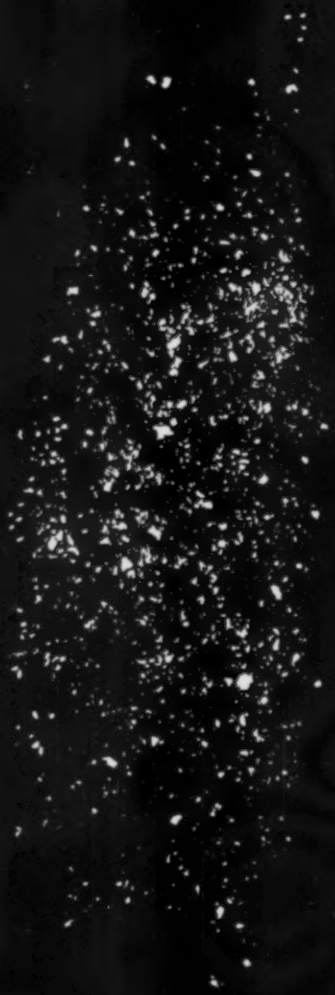
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references:

1. Kirby, W. L.: Preliminary and short report. Cadmium sulfide suspension in seborrhea capitis. J. Invest. Dermat. 29:159 (Sept.) 1957. 2. Mullins, J. F., and Barnett, J. R.: Cadmium shampoo treatment of seborrheic dermatitis. Texas J. Med. 53:640 (Aug.) 1957. 3. Stough, D. B.; Lewis, R. A.; Farmer, B. L.; Osment, L. S., and Noojin, R. O.: New beneficial agents in the treatment of acne vulgaris and seborrheic dermatitis. To be published.

—Continued from page 74a

Nebralin, Smith-Dorsey, Division of The Wander Company, Lincoln, Nebraska. Tablets, each containing 90 mg. pentobarbital and 425 mg. mephenesin. Indicated to produce relaxation, and then through central nervous system sedation to induce sleep. *Dose*: As directed by physician. *Sup*: Bottles of 50.

Pen-Vee Pediatric, Wyeth Laboratories, Philadelphia, Pennsylvania. Dry powder, each 5 cc. of which, when reconstituted with water, contains 250 mg. of antibiotic. Indicated for most infections caused by organisms susceptible to penicillin. *Dose:* As directed by physician. *Sup:* Powder for reconstitution to 2 fl. oz.

PMB 200, Ayerst Laboratories, New York, New York. New dosage form, each tablet containing 0.4 mg. conjugated equine estrogens and 200 mg. meprobamate. Indicated for treatment of menopause complicated by unusual emotional stress. *Dose:* One tablet three times daily. *Sup:* Bottles of 60 and 500.

Pyribenzamine Lontabs 50 mg., Ciba Pharmaceutical Products, Summit, New Jersey. New dosage form, primarily for the pediatric market. Indicated for prompt and prolonged relief of hay fever, asthma and other allergic reactions which are known to respond to pyribenazmine therapy. *Dose:* 1 or 2 tablets daily. *Sup:* Bottles of 100.

Pyridium Tri-Sulfa, Warner-Chilcott Laboratories, Morris Plains, New Jersey. Tablets, each containing 150.0 mg. phenylazodiamino-pyridine HCl and 167.0 mg. each of sulfadiazine, sulfamerazine and sulfamethazine. Indicated for the treatment of acute urinary tract infections. *Dose:* Adults: one tablet four times daily. *Sup:* Bottles of 30.

RG Lecithin, The Glidden Company, Cleveland, Ohio. Now available in wafer form. Dietary food supplement. Packed in boxes of 60.

Sinaxar, The Armour Laboratories, A Division of Armour & Company Chicago, Illinois. For low back pain, muscle strains and contusions, frozen shoulder, muscular rheumatism, stiff neck, bursitis, rheumatic joint pain, fibrositis, myositis, cervical root syndrome and spondylitis. *Dose:* 1 or 2 tablets, three times a day. *Sup:* 200 mg. tablets in bottles of 50.

Spordex, American Sterilizer Company, Erie, Pennsylvania. Biological index for determining efficiency of sterilization. Test set consists of three bacterial strips seeded with dry spores of known populations and resistance. Two strips placed within the load in the sterilizer and subjected to routine cycle. Third strip retained as a control. Three strips then mailed to Amsco Research Laboratory for culturing. *Sup:* Boxes of 12 or 24 sets.

—Concluded on page 86a

RAPID, EFFECTIVE RELIEF IN SPRAINS AND STRAINS

The season is soon approaching for summer sports and hobbies that strain and sprain muscles.

Numerous clinicians have reported immediate and prolonged relief with the combined use of Phyatromine®-H injection and Salimeph-C® tablets.

Regan[1] describes this combined regimen as a safe and effective means of relieving the pain-spasm-pain cycle in musculoskeletal disorders. He reports that the Phyatromine-H injection provides an emergency response while the patient is still in the office, and the Salimeph-C orally gives continuous analgesic, anti-inflammatory and sustained antirheumatic action between office visits. This "inject-oral" therapy proved simple, well tolerated and effective in controlling pain and muscle spasm.

Natenshon,[2] who previously reported immediate relief with Phyatromine-H injections,[3] used Salimeph-C in 300 unselected patients in the treatment of arthritis and painful spastic skeletal muscle conditions. His results in acute traumatic conditions including sprains, strains, torticollis, low back pain, fibrositis, myositis, bursitis (non-calcified) and tendonitis showed a marked improvement in 90 per cent of the cases, and a moderate improvement in 10 per cent. He concludes that Salimeph-C is effective in relieving both pain and spasm; safe to administer over prolonged periods without danger of toxic side effects; non-habit forming; and economical to use.

According to Marshall,[4] "Administration of . . . Phyatromine to patients with muscular strains . . . gives relief from associated skeletal muscle spasm."

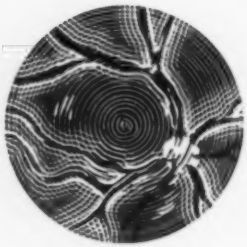
Stahmer[5] reports: "... Phyatromine® is an excellent medication for relief of muscle spasm in occupational injuries such as sprains, back, neck and shoulder strains, pulled ligaments, and similar injuries in which there is skeletal muscle spasm..."

To the patient who hobbles into the doctor's office with an acute painful back or aching muscles resulting from recreational strain, the fast relief from a single injection of Phyatromine-H seems like a miracle. Equally important are Salimeph-C tablets, which exert dependable, prolonged analgesic, anti-inflammatory and skeletal muscle relaxant effects and keeps the patient on the mend.

Each yellow scored tablet of Salimeph-C contains Salicylamide 250 mg., Mephenesin 250 mg. and Ascorbic Acid 30 mg. Each cc. of Phyatromine-H contains Physostigmine Salicylate 0.6 mg. and l-Hyoscyamine Hydrobromide 0.3 mg.

Salimeph-C is available in bottles of 100, 500 and 1000 tablets, and Phyatromine-H in 1 cc. ampuls, boxes of 25; in 10 cc. and 30 cc. multiple dose vials. Both products are supplied by the *Kremers-Urban Company, Milwaukee 1, Wisconsin.*

(1) Regan, J. M.: Wisconsin M. J. 56: 305-308, 1957; (2) Natenshon, A. L.: Clin. Med. 2: 23-28, 1955; (3) Idem: Med. Times 81: 342, 1953; (4) Marshall, W.: Jour.-Lancet 70: 391-393, 1950; (5) Stahmer, A. H.: Indus. Med. & Surg. 20: 337, 1951.





in severe essential or malignant hypertension

to reduce blood pressure and control symptoms

When 30 patients with hypertensive diseases of varying severity received Methium with Reserpine, 76.6% showed a significant fall in both standing and supine blood pressure. Under treatment for an average of 14 months, nearly all experienced marked symptomatic improvement. Blood pressure reduction was achieved and maintained on " . . . less than half the usual daily requirement of either drug."*

In this combination the ganglionic blocking action of Methium appears to be potentiated by the central vasodepressive effect of reserpine, leading to "...clinically smoother and more satisfactory blood pressure reduction."*

Because lower dosages of each drug are required when used in combination, side effects from Methium with Reserpine occur rarely and are usually mild. Optimal dosage is safely established through gradual increases.

* REFERENCE:
Crawley, C. J. *et al*: N. Y. State J. of Med. 55:23 (Dec.1) 1955: pp. 3461-3463.

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LIXATONE

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Each 30 cc contains: Liver fraction 1, 750 mg.; betaine HCl, 180 mg.; choline (as tricholine citrate), 180 mg.; inositol, 180 mg.; l-lysine monohydrochloride, 300 mg.; vitamin B12 crystalline, 30 mcg.; thiamine HCl 10 mg.; riboflavin (as monophosphate), 10 mg.; niacinamide, 72 mg.; pyridoxine HCl, 3 mg.; calcium pantothenate, 12 mg.; folic acid (in suspension), 1.5 mg.; alcohol, 10%.

For professional sample and descriptive literature, write to —

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—Concluded from page 82a

Sterane I.M., Pfizer Laboratories, Division of Chas. Pfizer & Co., Brooklyn, New York. Injectable form for intramuscular use, each cc. of which contains 25 mg. prednisolone in aqueous suspension. Indicated for rheumatoid arthritis, bronchial asthma, inflammatory skin disorders, collagen diseases and neoplastic diseases. *Dose:* Intramuscularly, 1 cc. daily. *Sup:* Vials of 5 cc.

Temaril, Smith, Kline & French Laboratories, Philadelphia, Pennsylvania. Tablets, each containing 2.5 mg. trimeprazine. Indicated for the relief of itching, regardless of cause. *Dose:* Adults: one tablet b.i.d. after meals, plus 2 tablets h.s. *Sup:* Bottles of 50.

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even if your patient is a . . .

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. . . he'll soon be on the beam again, thanks to

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low back syndrome . . . sprains . . . strains . . . rheumatic pains

FLEXILON gets them back on the job *fast*. Each tablet contains:

FLEXIN Zoxazolamine‡ . . . . . 125 mg.
The most effective oral skeletal muscle relaxant.

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The preferred analgesic for painful musculoskeletal disorders.

SUPPLIED: Tablets, enteric coated, orange, bottles of 50.

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SUPPLIED: SUSPENSION, bottles of 12 fl. oz. TABLETS, bottles of 100. Each teaspoonful (5 cc.) and tablet contains 2.5 mg. of ambutonium bromide and 8 mg. of butabarbital in combination with aluminum hydroxide and magnesium hydroxide approximately equivalent to 1 teaspoonful of aluminum hydroxide gel and ¼ teaspoonful of milk of magnesia. Also available: Tablets Ambutonium Bromide, 10 mg., bottles of 100.

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NEW anticholinergic Ambutonium bromide, a new potent anticholinergic, has definite antispasmodic effect and significantly reduces gastric acidity, secretory volume, gastrointestinal motility.

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New: DAYALETS®-M . . . 10 vitamins, 9 minerals!

10 important vitamins in each tiny Dayalet:

Vitamin A	3 mg. (10,000 units)
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Thiamine Mononitrate	5 mg.
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Nicotinamide	25 mg.
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Vitamin B_{12} (as cobalamin concentrate)	2 mcg.
Folic Acid	0.25 mg.
Calcium Pantothenate	5 mg.
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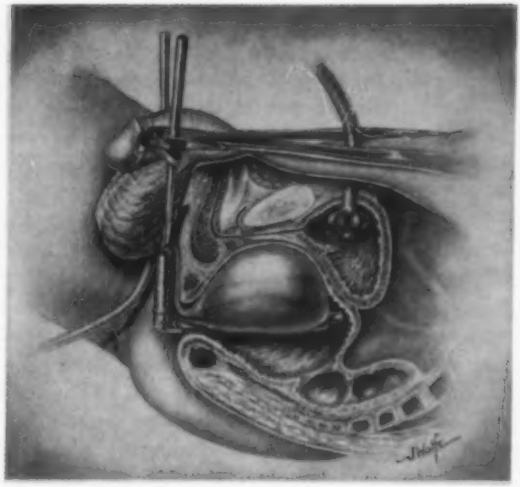


Illustration of a new hemostatic device for use in one-stage suprapubic prostatectomy. It consists of a rubber bag supported on a metal blade, inserted into the rectum. When the rubber bag is filled pressure is exerted on the prostatic capsule posteriorly.

A Report on 1,524 Surgical Procedures

PROSTATIC SURGERY

FRANK C. HAMM, M.D.

Department of Surgery, The Brooklyn Hospital, and the Division of Urology, State University of New York Downstate Medical Center, Brooklyn, New York.

One thousand, five hundred and twenty-four operations were done at The Brooklyn Hospital from 1946 to 1955 for the relief of prostatic obstruction. All patients undergoing prostatic surgery during this period are included in this report. The operations were done by all members of the attending and resident staffs.

The indications for surgical intervention are well defined. Once real prostatic hyperplasia has developed, little is to be gained by massage, passage of sounds, or other manipulative procedures. Any benefit derived from nonoperative treatment is temporary, and as soon as the treatments are discontinued the disease process continues unabated. A patient having one attack of complete urinary retention, or one who habitually gets up twice or more a night and has definite difficulty in starting the stream should be investigated, and if well developed hyperplasia is present surgical removal should be recommended. The process of prostatic hyperplasia begins in the early part of the fifth decade and, generally speaking, it is progressive. Moore, R. A.[1] found that prostatic hyperplasia reached an incidence of seventy five per cent on autopsy studies in the eighth decade. It is better also to deal with the obstructive process when the patient is in good

physical condition. All too often operation is delayed until some intercurrent illness such as coronary occlusion, or an urgent operation such as abdominoperineal, or elective operations such as herniorrhaphy or hemorrhoidectomy are required, these procedures may precipitate an irreversible complete urinary retention in the patient who, for a considerable period of time, has been suffering from prostatic obstruction but who was able to empty his bladder as long as his muscular tone was maintained.

The diagnosis of prostatic hyperplasia is not difficult. An enlarged, soft, elastic, homogeneous prostate gland is felt on rectal examination. One cannot rule out prostatic hyperplasia by the palpation of a nearly normal-sized gland. The finger in the rectum feels only one side of a pyramidal shaped organ. The hyperplastic process may be minimal or it may extend up into the bladder producing a ball valve or trap door formation that will not be palated on rectal examination. The need for careful repeated rectal examinations in all men past fifty years of age needs to be emphasized. The symptoms of early carcinoma are indistinguishable from those of benign hyperplasia. Careful rectal examinations are an essential part of every physical examination; the finding of a hard nodule in the prostate demands immediate investigation, as early detection and radical prostatectomy offer the only hope of cure. The incidence of carcinoma in our experience is thirteen per cent in all patients coming to operation for relief of urinary obstruction.

Cystoscopy is usually required to complete the diagnosis and to rule out other disease processes.

All types of prostatic surgery have been employed in this series, but not to the same degree. About two-thirds were done using endoscopic methods. The use of all types of operation should be continued so that the various surgical techniques can be employed when specifically indicated.

Anesthesia: Spinal anesthesia was used in about eighty per cent of the operations; it is very satisfactory for this type of surgery. There are, however, some contraindications to its use. The patient may have an inherent dislike for the idea, and when he is completely opposed, it is a great mistake to insist on its use, as good results with well balanced general anesthetic agents can be obtained. Spinal is not used in patients who have an lesion of the spinal cord. Even in the absence of any demonstrable lesion, but where an atonic type of bladder is present, spinal is probably contraindicated. There has been some increase in the use of general anesthesia recently.

Bilateral division of the vasa is done routinely in all types of prostatic operations. A segment usually about one centimeter in length, is removed through small incisions on either side of the scrotum to prevent epididymitis (a very painful and debilitating complication) from developing in the post-operative period. The patient is informed that he will be sterile following the operation, but his sexual vigor, at least whatever remains before the operation, will not be further diminished after.

Table I indicates the total number of operations in each category with the mortality of each. The total overall mortality is 1.56 per cent.

The endoscopic or the transurethral technique accounts for roughly two-

TABLE I REPORT ON PROSTATIC SURGERY

	NO. OF OPERATIONS	MORTALITY
Endoscopic (transurethral) resection ...	1105	1.38%
One-stage suprapubic	230	2.10%
Two-stage suprapubic	79	2.5 %
Retropubic	105	2.85%
Perineal	5	0%
TOTAL	1524	1.6 %

thirds of all the operations with a mortality of 1.26 per cent. Some correction of this mortality figure is indicated as ten per cent of the one thousand, one hundred and five operations were repeat procedures, i.e. two operations were required for complete removal of the prostate. Certain glands of unusually large size may be deliberately planned as a two-stage procedure. In other instances, it may be advisable to discontinue the surgery if all factors are not entirely favorable, with the idea that it can be resumed at a later time. For this reason, transurethral operations are usually reserved for very worst risks. We, therefore, correct our mortality for transurethral operation to 1.38 per cent.

The technique used for endoscopic resection is essentially that described by Nesbit[2]. We also use the instrument designed by him as it can be operated with one hand, leaving the other free for counter pressure against the gland in the rectum. Removal of the gland is carried out systematically, starting with the anterior lobe and carrying the resection first to one lateral lobe and then the other. Complete prostatectomy is the goal of all techniques for prostatic surgery, and endoscopic removal is no exception. The instrument is supplied in three different sizes so that a smaller one can be used in individuals with a urethra of diminished calibre. Hemostasis is kept under good control to prevent blood loss and to facilitate the operation. If the external meatus is small, an incision may be required. If a stricture of the urethra is found, an external urethrotomy is done and the resectoscope is introduced through this opening. It adds very little to the operation and heals rapidly afterward. An external urethrotomy was done in about five percent of our transurethral operations.

Near the close of the operation, hemostasis is carefully carried out as in all types of prostatic surgery to reduce the necessity for transfusions. An infusion of five percent glucose in water is running throughout the operation and is continued post-operatively until a total of two thousand cubic centimeters are given. If the blood pressure rises during the operation, the infusion is slowed. If the gland is small and hemostasis is good, a nonirrigating catheter is used. If the prostatic cavity is very large and venous bleeding persists, a two-way irrigating catheter is introduced and continuous irrigation with warm physiologic saline solution is carried out for twenty-four hours.

The patient has little or no pain during the post-operative period. He is out of bed for a few minutes six hours after the operation. Further ambulation is encouraged the next day. The catheter is removed at the end of a seventy-two hour period; following this he should void freely with a good stream. Patients living near are permitted to return home on the seventh day post-operative. Those living out of the city return home on the tenth day. He remains at home for a week when he makes his first visit to the office. No post-operative treatment

and very little medication is used unless definitely indicated. His urine remains cloudy for from six to twelve weeks post-operatively, and there is some dysuria and frequency. The urine will not clear up entirely until epithelialization is complete. He is usually able to return to work at the end of the second week. The types of glands that may be successfully dealt with by the endoscopic method include all obstructive lesions at the bladder neck, whether benign or malignant, except the very large benign glands in the relatively young man who is in exceptionally good condition and with a life expectancy of possibly fifteen years or over. The one-stage suprapubic operation is probably better for this group.

One-Stage Suprapubic Prostatectomy The one-stage suprapubic prostatectomy was performed on two hundred and thirty patients with an overall mortality of 2.1 percent. The post-operative period is almost the same in our experience as that following the retropubic prostatectomy. Our technique for the one-stage operation has been influenced and altered by our experience with the technique used in retropubic prostatectomy. It is performed through a mid-line suprapubic incision, although various modifications of the transverse incision yield a low incidence of incisional hernia and a strong abdomen. The bladder is opened through a vertical incision in its lower segment so that the prostatic urethra and bladder neck are brought into clear vision. The enucleation of the prostate gland is done with the right index finger without a supporting finger in the rectum. The use of the rectal finger is not necessary and is a serious break in technique. Following enucleation, the cavity is packed with a hot saline gauze for about five to six minutes. Following its removal, all spurters around the bladder neck are clamped with hemostats and electrocoagulated. If there is no oozing from the prostatic cavity, no further attempts at hemostasis are carried out and closure is done around a #36 F. four wing Malecot suprapubic tube. If, however, there is any considerable bleeding from the depths of the prostatic cavity, an iodoform gauze pack is placed in the prostatic cavity or a rectal compression bag is introduced and pressure made on the rectal side of the prostatic cavity. Fig. I. If the rectal device is used, compression is released after a two-hour period.

Perineal prostatectomy deserves more prominent consideration than is represented in this group of patients. It was done in only five instances; there was no mortality. It is a very satisfactory method in selected patients and has been used by us more frequently in the past two years. The diminished incidence or absence of shock and its associated syndromes (ileus, etc.) are less in operations on the perineum as compared to the suprapubic approach. The technique most frequently used is that popularized by Belt[3]. The incision is made about the upper half of the anus in horseshoe shape or inverted U. Dissection is carried under the anal sphincter along the longitudinal layers of the rectum to the prostate, thus avoiding most of the important blood vessels and nerves in the perineum. Good exposure of the bladder neck can be obtained with hemostasis under vision.

The indications are:

1. Very large benign prostate in the aged, debilitated patient.
2. Exposure of the prostate for biopsy

of a nodule that is suspicious for carcinoma. If cancer is found, one can proceed with a radical resection of the prostate.

It is not our first choice for young men except where malignancy is suspected, as there is a small incidence of impotence following its use.

Two-Stage Suprapubic Prostatectomy The need for the two-stage suprapubic operation has almost disappeared. Only seventy-nine operations are recorded for the ten-year period, and only five of this type of operation were done during the last five years. Why has the two-stage operation, which was so very popular twenty-five years ago, been replaced by other methods? Several factors are probably important. In the past, patients came to prostatic surgery reluctantly and in desperation after prolonged sepsis and uremia. Their poor general condition and reduced renal function required long periods of drainage for stabilization of the cardiorenal system before prostatectomy could be attempted. Patients are now being referred for surgery before extensive damage has occurred. There is also a change in psychology on the part of the surgeon, some of whom proceeded on the theory that preliminary suprapubic drainage was a beneficial thing for all patients, whether or not marked urinary retention was present. Today the two-stage operation is reserved for those patients requiring prolonged bladder drainage or those who do not tolerate an indwelling catheter well, or it may be useful in managing the debilitated patient who has associated or complicating disease of the lower urinary tract demanding simultaneous relief, such as a large diverticulum of the bladder, bladder tumors, etc. The mortality as listed in our series is 2.5 percent. This, of course, is a small series of patients and not important statistically. Also, those not surviving the original cystotomy are not reported here, so that the overall mortality would probably be slightly higher. There are several objections to this type of operation. There is a long period of hospitalization, averaging from five to six weeks for the total procedure. Formerly the second stage of the operation was done about two weeks after the first stage. It is our practice now to increase the drainage period between the first and second operations. The patient is sent home between operations. The elderly, debilitated men stand repeated surgery poorly, especially when the secondary operation is done within a relatively short period of time. Longer periods of drainage up to two or three months yield better mortality figures.

Retropubic prostatectomy was done in one hundred and five patients with a mortality of 2.85 percent. It is a very satisfactory operation. It was introduced by Millen[4] and we are indebted to him for demonstrating his operation at the Brooklyn Hospital in 1947. He showed that a one-stage procedure could be done without excessive risk, and that the retropubic (space of Retzius) could be invaded without disastrous consequences, and thirdly he demonstrated the importance of making a low type of incision thereby giving adequate exposure for the prostatic capsule, allowing the surgeon to obtain better hemostasis under vision. This was a distinct advance over the two-stage operation, where the actual removal of the gland was done as a blind procedure. The post-operative course is usually smooth. The bladder is closed and urinary drain-

age is carried on through a urethral catheter, eliminating some of the discomforts of the suprapubic operation. The patient is usually able to get out of bed six or eight hours after the operation and is up in a chair the following day. Complete healing in our experience takes about fifteen days. After being discharged from the hospital, the patient returns home for about ten to fourteen days, when he returns for a recheck visit. He is usually able to return to work after this period. The disadvantages of this type of procedure are first that the genitals are exposed during the course of the operation for the introduction of the indwelling urethral catheter, and secondly the suprapubic tube is not used during the postoperative period. As long as a suprapubic incision has been made, it seems too bad that one does not employ a large size suprapubic tube for a forty-eight-hour period in case blood clots form in the bladder. We have therefore revised the technique to remove these objections.

Summary

A review of prostatic surgery for a ten-year period in the Brooklyn Hospital is presented. The series includes all patients, ward and private, with an overall mortality of 1.56 percent.

In view of the diminished risk and shorter period of hospitalization as compared with prostatic surgery in earlier times, one is justified in advising surgery before prolonged obstruction has produced irreversible damage to the upper urinary tract.

A two-to-one preference for the endoscopic method is shown. This stems from the fact that this operation is used for the very worst risks, as 1) it may be discontinued at any stage, 2) little or no shock, 3) early ambulation is possible, 4) freedom from pain post-operatively, 5) short period of hospitalization, 6) low risk, 7) lower incidence of complications. All types of operation should be available when specific situations indicate their use.

Division of Urology, Department of Surgery, 451 Clarkson Ave., Brooklyn 3, N. Y.

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A New Treatment for RHEUMATIC FEVER

NORMAN E. CLARKE, M.D.*
Detroit, Michigan

For many years salicylic acid has been the only known chemical compound which could suppress the manifestations of rheumatic fever. The more recently discovered anti-rheumatic corticosteroids have added little to rheumatic fever therapy. The unique therapeutic action of salicylic acid prompted the investigation of its chemically related compounds for the treatment of rheumatic fever. It was hoped that a compound could be found that would have higher potency, be non-toxic, and capable of preventing damage to the heart if used early in an initial attack of the disease.

The chemical structure of salicylic acid, that was also present in most of the related compounds that were investigated, was the six-sided benzene ring with a single carboxyl group (COOH) and an hydroxyl group (OH) at the 2 position on the ring adjacent or ortho to the carboxyl group. Salicylic acid belongs to the chemical group of monophenols of which there are two other compounds one with the hydroxyl group in the 3, the other in the 4 position on the benzene ring. Of the three monophenols only salicylic acid forms a chelate ring which produces its anti-rheumatic qualities. The other two monophenols not having chelate rings have no anti-rheumatic action.

The second group of compounds investigated was the diphenols which, with one exception have the same chemical structure as salicylic acid, plus a second hydroxyl group attached at various positions on the benzene ring. The first diphenol examined was gentisic acid or 2,5 dihydroxy benzoic acid. which is a metabolite of salicylic acid. This compound has the chemical structure of salicylic acid plus a second hydroxyl group in the 5 or para position. Gentisic acid has a chelate ring and a reversible quinone-hydroquinone system. In an earlier paper (Clarke, Mosher, and Clarke[1]) the treatment of patients who had monocyclic, polycyclic, and persistent forms of rheumatic fever demonstrated that gentisic acid excelled the salicylates in several respects. Although the gentisates required the same dosage as salicylic acid they produced no toxic reactions and controlled the manifestations of the mild or persistent disease.

* Department of Research, Providence Hospital.

The diphenol beta resorcylic or 2,4-dihydroxy benzoic acid had low toxicity, but did produce diarrhea in a few of the patients to whom it was administered for two weeks to three months in one gm. doses every three hours and up to six gm. each day. In four patients who had rheumatic fever and blood sedimentation rates lower than 100 mm. in one hour symptomatic relief was obtained in three to ten days with temperatures and heart rates becoming normal in eighteen to twenty-four days and blood sedimentation rates in an average of twenty-six days. In three patients who had pericarditis, blood sedimentation rates above 100 mm. in one hour and temperatures up to 103°F. there was slow, limited suppression of the disease manifestations, elevated temperatures and blood sedimentation rates falling but not to normal levels and heart rates and murmurs remained unchanged after three weeks when the drug was discontinued.

The compound 3,4-dihydroxy benzoic or protocatechuic acid, another isomer of gentisic acid did not relieve the manifestations of rheumatic fever but when given in 1 gm. doses at three hour intervals and up to six gm. each day to patients with rheumatic fever, there was increased symptoms, temperature, heart rate and mental depression with headache. This compound does not have a chelate ring but can form a quinone-hydroquinone system. Its lack of therapeutic action was evidence that a phenolic compound must contain a chelate ring to suppress the manifestations of rheumatic fever. The formation of a quinone-hydroquinone system is important but of itself has no anti-rheumatic function.

The diphenol 2,3-dihydroxy benzoic acid is an isomer of gentisic acid that had never been administered to humans. We synthesized this preparation to a purity of 99.5 percent and used it to treat five patients who had severe rheumatic fever. The therapeutic dose of 2,3-dihydroxy benzoic acid was twenty-five to fifty percent less than for salicylic acid. There was no toxic reaction. The compound was administered to severely ill patients and their temperatures, which had ranged from 102° to 104°F., were normal after one to five days, heart rates after three to five days, and blood sedimentation rates in four patients within twelve days of therapy. In one patient the blood sedimentation rate remained elevated after three weeks of therapy although all signs and symptoms of rheumatic fever were absent. After one or two days of therapy all patients had striking improvement in the color of their skin, appetite and general sense of well being.

The compound 2,6-dihydroxy benzoic or gamma resorcylic acid had been used for treating rheumatic fever by Reid, et al.[2] in 1951. This diphenol has 2 hydroxyl groups adjacent to the single carboxzyl group so can form a double chelate ring. Our gamma resorcylic acid was synthesized to a purity of 94.2 with 5.8 percent water and the amounts given to patients were the same as used by Reid who described numerous signs of toxicity but we observed no toxic reactions. We administered gamma resorcylic acid to five patients who had severe rheumatic fever, four of them having sedimentation rates above 100 mm. in one hour. Many manifestations of rheumatic fever were uniformly suppressed within one or two days of gamma resorcylic acid therapy especially those of pain and other arthritic

manifestations. The temperatures and heart rates were normal after one to three days of therapy and the blood sedimentation rates fell rapidly. The effect of gamma resorcylic acid was generally good on symptoms, signs of carditis, fever, and heart rate, and the compound appeared to be at least five times more potent than salicylic or gentisic acids. However, these patients did not experience the early sense of well being or striking improvement in appetite and skin color that had been observed with gentisic acid therapy.

The third group of phenolic compounds, related to salicylic acid and included in this clinical study, was triphenols and the first investigated was 2,4,6-trihydroxy, benzoic or phloroglucinol carboxylic acid. This compound has the double chelating structure like gamma resorcylic acid but a third hydroxyl group in the 4 position like in beta resorcylic acid. Phloroglucinol carboxylic acid was investigated in twelve patients who had rheumatic fever by administering one gm. and up to six gm. of the compound each day for periods of seven days to three months, most of them ingesting 1 gm. to 1.33 gm. of the compound in divided doses each day for ten to twelve weeks. There were no toxic reactions. Some manifestations of rheumatic fever were suppressed within two or three days of therapy, temperatures were normal within six to ten days, blood sedimentation rates within four weeks with some in seven to fourteen days. When therapy had been started a few days after the initial onset of the disease there was unusual restoration of normal heart findings. It seemed possible for this compound to prevent heart damage if it was used early in a first attack of rheumatic fever. The anti-rheumatic potency of phloroglucinol carboxylic acid oppeared to be six to eight times greater than that of salicylic acid.

The other triphenol investigated was 2,3,6-trihydroxy benzoic acid. It had been found that 2,3-dihydroxy benzoic acid had outstanding anti-rheumatic activity and 2,6-dihydroxy benzoic had many but not all of the same therapeutic qualities and appeared to be at least five times more potent than salicylic acid. These therapeutic features were combined in the new synthesized compound 2,3,6-trihydroxy benzoic acid which was administered to patients in 0.2 gm. doses at three hour intervals five times each day but decreased to four times or increased to 0.3 gm. doses at three hour intervals five times a day under special circumstances. The usual effective amount was one gm. in divided doses each day. There were no toxic reactions. The 2,3,6-trihydroxy benzoic acid was administered to six patients, most of them having severe to sub-malignant rheumatic fever. This compound was superior to other phenols in our series being free of side reactions, highly effective in small doses and suppressing manifestations of severe rheumatic fever. Most symptoms were relieved within one or two days of therapy; temperatures became normal in one to five days even in severe forms of the disease. The heart rates returned to normal in an average of eleven days of therapy but varied from three to thirty days according to the severity and complications of the disease. When pericarditis was absent the heart rate was normal in an average of eight days. The general appearance of all patients improved and they had a definite sense of well being

within the first forty-eight hours of therapy. In five patients the blood sedimentation rates were normal within the first twelve days of therapy, but in one it remained elevated after thirty days but he had the malignant form of the disease.

The Effect on Eosinophil Cell Counts and White Blood Cells A modified Thorn test with consecutive hourly absolute eosinophil cell counts was done. Various amounts of the several phenolic compounds for each kilogram of body weight were administered and absolute eosinophil cell counts made on normal subjects and on patients with rheumatic fever. Frequent differential white blood cell counts were obtained on all patients undergoing treatment for rheumatic fever.

There was a more than fifty percent or a significant decrease in the absolute eosinophil cell count of patients administered salicylic, pyrocatechuic, beta resocylic, gentisic, and gamma resorcylic acid. There was no decrease in the absolute eosinophil cell count with protocatechuic acid or with phloroglucinol carboxylic and 2,3,6-trihydroxy benzoic acids, the last two compounds having greatest anti-rheumatic potency.

All of the phenolic compounds investigated, except protocatechuic acid, produced a decrease in polymorphonuclear and increase in lymphocyte cell counts. The increase in circulating lymphocytes corresponded with the clinical improvement but in time the differential white blood cell counts assumed the normal pattern.

The Urinary Excretion of Phenolic Compounds When unnatural or harmful compounds are ingested the body detoxicates and excretes them commonly as conjugates of sulfur or glucuronic acid. This has been found true in previous reports on phenolic compounds[3]. Of the mono and diphenols, salicylic, beta resorcylic, gentisic, and protocatechuic acids were excreted as conjugates of sulfur and glucuronic acid and gamma resorcylic acid decreased the normal urinary levels of these compounds except in the malignant form of rheumatic fever. The second hydroxyl group added in the 6 position to the structure of salicylic acid greatly increased therapeutic potency with reduction in normal urinary excretion levels for sulfur and glucuronic acid but a second hydroxyl group in the 3 position only slightly improved potency but also diminished the normal amounts of sulfur and glucuronic acid excreted in the urine.

The most important hydroxyl group outside of the 2 or 6 positions was the 3 position of pyrocatechuic acid. The qualities attached to the 2,6, and 3 positions of hydroxyl groups were combined in the new compound 2,3,6-trihydroxy benzoic acid that had maximum anti-rheumatic potency, was nontoxic, decreased the urinary excretion of sulfur, but less so of glucuronic acid in patients with sub-malignant rheumatic fever.

The decrease in urinary excreted sulfur with ingestion of the more potent phenolic compounds was generally constant but glucuronides increased some in severe or malignant rheumatic fever. It seemed probable that had larger quantities of these compounds been available they would have decreased urinary excretion of glucuronides even in the malignant forms of the disease.

Discussion The therapeutic dominance of salicylic acid for rheumatic fever clearly indicates a vital relation-

ship between the compound's simple chemical structure and the biochemical distortions produced by the disease. The monophenol salicylic acid produces several undesirable toxic reactions but its metabolite gentisic acid, a diphenol, is nontoxic and superior therapeutically. A chelate ring is essential for a phenolic compound to have anti-rheumatic properties but the importance of second or third hydroxyl groups and their position on the benzene ring has had limited investigation.

Beta resorcylic acid differs from gentisic acid in the position of the second hydroxyl group with the latter being able to also form a reversible quinone-hydroquinone system. The ability of gamma resorcylic acid to suppress rheumatic fever manifestations without prompting mechanisms of detoxication indicates that chemical stresses induced by rheumatic fever are naturally fortified by the double chelating structure. This compound was completely utilized or unusually changed in some manner with a saving action suggested by a significant decrease in urinary excretion of 17-ketosteroids.

The second hydroxyl group in the 3 position of 2,3-dihydroxy benzoic acid improved anti-rheumatic activity without prompting mechanisms of detoxication. Other conjugated metabolites if they had been present would have been detected unless the compound had undergone change to a different form. This compound is accepted by the human organism as a natural or completely utilizable substance that needs no detoxication and can act to normalize the chemical stresses induced by rheumatic fever.

The decrease in normal urinary excretion of sulfur and glucuronic acid by patients who has ingested phloroglucinol carboxylic, 2,3-dihydroxy benzoic, and gamma resorcylic acids differs from the change with other phenolic compounds; these have been found to increase urinary output of one of both of the detoxifying agents[3]. The new compound 2,3,6-trihydroxy benzoic acid had the lowest toxicity and acted more promptly to suppress manifestations of rheumatic fever and to lower elevated blood sedimentation rates than did other phenolic compounds investigated. Like other double chelating phenols in this series, it decreased urinary excretion of sulfur and usually glucuronic acid conjugates except in patients who had malignant or sub-malignant rheumatic fever. These metabolic findings suggest a saving action on special connective tissue components. The compounds 2,3,6-trihydroxy benzoic acid produced significant and consistent reduction in the urinary excretion of 17-ketosteroids which support a saving action in rheumatic fever.

In some unknown way, but probably precipitated by a group A hemolytic streptococcal infection, rheumatic fever attacks connective tissue and particularly mucoid or ground substance varies according to the tissue's function but consists in large part of polysaccharides with glucuronic acid and chondroitin sulfate present as long chain polymers. The exudative phase of rheumatic fever disrupts the collagen-muco-polysaccharide complexes in such a manner as might occur with depolymerization.

This phenomenon has been related to actions by hyaluronidase. The in vitro actions of hyaluronidase are inhibited by large concentrations of salicylates, by smaller concentrations of

gentisic acid and by the quinone of gentisic acid.

This investigation demonstrates the importance of chelation in the mechanism of action of salicylic acid and shows that potency was greatly increased by adding a second hydroxyl group in the 6 position. The toxicity of the phenols investigated was reduced least by a second hydroxyl group in the 4,6 and most by one in the 3,5 positions. The limited toxicity of phenolic compounds with a second hydroxyl group in the 4 or 6 position was abolished by a third hydroxyl group. The highest toxicity was found in the diphenol protocatechuic acid which was not a chelating agent, so it appears that the ortho position of a hydroxyl group decreases side reactions.

The smaller amounts required of gamma resorcylic, pyrocatechuic, and the triphenolic acids to suppress the manifestations of rheumatic fever as compared to salicylic acid supports the role of anti-rheumatic metabolites.

The anti-rheumatic actions of salicylic, gentisic, and gamma resorcylic acids have been compared with ACTH and adrenal steroids. The urinary excretion of 17-ketosteroids was not changed by salicylic, beta resorcylic, or protocatechuic acids but was decreased by pyrocatechuic acid and the three compounds having double chelate rings.

The blood lymphocyte cell counts were significantly increased by all phenolic compounds, that had anti-rheumatic properties, the elevation parelleling clinical improvements. This is contrary to the action of adrenal anti-rheumatic hormones. Absolute eosinophil cell counts were not significantly decreased by the triphenols which had the highest anti-rheumatic activity although the urinary excretion of 17-ketosteroids and sulfur were decreased. The phenolic compounds and anti-rheumatic adrenocorticosteroids do not appear to suppress the manifestations of rheumatic fever by the same processes.

With triphenol anti-rheumatic therapy there was a quantitative relationship between the severity of the disease and the level of urinary conjugates, the triphenols having been utilized by patients with rheumatic fever as natural substances so not requiring and actually reducing other processes of detoxication.

These compounds must serve directly in helping the body to complete synthesis and polymerization of disrupted connective tissue.

Summary

By investigating chemical compounds related to salicylic acid it was hoped to improve the treatment of rheumatic fever. The compounds investigated were the diphenols, gentisic, protocatechuic, pyrochatechuic, beta resorcylic, and gamma resorcylic acids, and the triphenols, phloroglucinol carboxylic acid and a new compound 2,3,6-trihydroxy benzoic acid.

Increased anti-rheumatic potency was present in the phenolic compounds which had double chelate rings and superior anti-rheumatic qualities were associated with second or third hydroxyl groups in the 3 position on the benzene ring.

The compounds which had single or double chelate rings and an hydroxyl group in the 3 position did

not produce the usual urinary changes associated with detoxication.

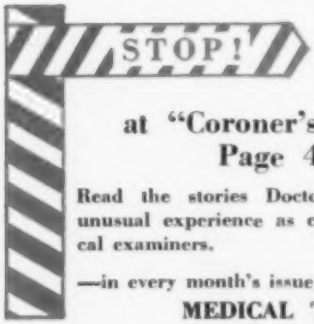
Phenolic compounds must bring about some changes in the human body which are associated with the anti-rheumatic adrenal hormones but which differed by producing a relative increase in circulating lymphocytes and decrease in the urinary excretion of 17-ketosteroids.

The high anti-rheumatic potency of double chelating phenols supports the importance of anti-rheumatic metabolites in salicylic acid therapy. The new compound 2,3,6-trihydroxy benzoic acid had highest potency, was non-toxic and when used early in a first attack of rheumatic fever, appeared to prevent damage to the heart.

Certain phenolic compounds have a saving action in rheumatic fever thereby permitting their direct utilization and aid the body in completing synthesis and polymerization of disrupted connective tissue.[4]

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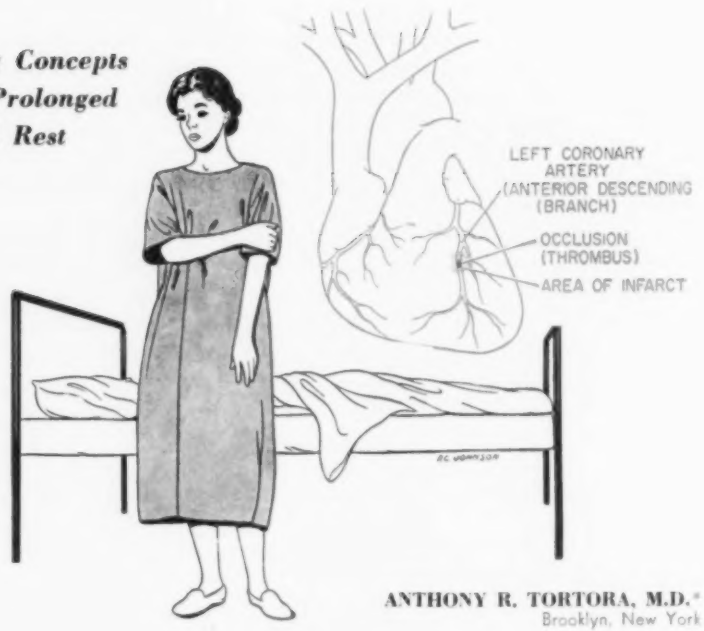


at "Coroner's Corner"
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MEDICAL TIMES

Changing Concepts About Prolonged Bed Rest



ANTHONY R. TORTORA, M.D.*
Brooklyn, New York

Acute Myocardial Infarction

Bed rest among other detrimental effects "saps morale, provokes desperation, and unleashes anxiety."[1] If the treatment of myocardial infarction is to be improved, it must first be changed it cannot improve if it remains static.

A wide divergence of views exist with regard to the merits of prolonged bed rest. When acute myocardial infarction was established as a definite clinical entity by Herrick's stimulating classic report[2] published in 1912, complete and prolonged periods of bed rest was considered a fundamental principle of the therapy of this disease. This cardinal principle was thought to be of paramount importance. It soon was universally agreed upon that injured myocardial tissue required approximately six weeks for complete reparation; that is, for the formation of cicatricial tissue in the infarcted area. Therefore, bed rest was recommended for that period of time. However, as time passed by, and greater experience and insight were obtained, the question of whether protracted bed rest was necessary became a controversial topic.

It is astounding how many facets of

* Assistant Attending Internal Medicine, Coney Island Hospital, Brooklyn, New York.

this subject have gained a new importance as well as the many new concepts that have come to light. For example there has been a considerable change in thought and attitude relative to bed rest. While the early thinking on the subject of bed rest was favorable to a long period in bed, experience has taught us to recognize the inadequacies of the initial concepts and methods of handling this particular aspect of treatment. The time has arrived when we must adjust our views to those investigators who through keen, resourceful, and acute clinical acumen and experience, revaluated the data and have demonstrated the evils of extended bed rest. This is the reason for the presentation of this paper.

In the supine position the central organ of the vascular system does not procure the greatest rest. When the body is directed perpendicular to the plane of the horizon, the heart has to propel the blood just over the arch of the aorta and then the remainder of the circulation gains the advantage of gravitational forces. It may be felt, that in order for the heart to propel blood just over the aortic arch, a greater force would be required on its part when an individual is in the upright position than when he is in the supine position. Employing the principle of hydrodynamics, one can readily envisage that the benefits derived from the gravitational forces once the arch is traversed, more than compensate for the small extra exertion that the heart has to undergo in order to propel blood over the arch when an individual is in the upright position. How would it be easier for the heart to expel seventy cubic centimeters of blood? In the recumbent position, it has to propel the blood or pump it against the entire resistance of the column of liquid; but when the body is upright it has to develop only enough energy to propel the blood so that it may reach and traverse the arch. Then the circulating blood gains the advantage of the effects of gravity.

The technique of cardiac catheterization has demonstrated that more work is placed on the heart when the body is in the recumbent, than when it is in the upright position.[3] It has been proved that in addition to increased cardiac work, an increase in the circulating blood volume results when the body is recumbent.[4,5,6] Experimental studies performed on normal human beings and patients ill with heart disease lying in the supine position, showed an increase in the venous flow to the right side of the heart. Further studies have demonstarted that after lying down for twelve hours, there was a rise in venous pressure, an increase in blood volume, a decrease in vital capacity, and a prolongation of the circulation time.[7] Certainly these findings are the ones we dislike recording in the patient who has a myocardial infarction. Other reports confirmatory of this have been published.[8,9]

A discussion of the hazards of bed rest would be incomplete without stressing the tremendous strain placed on the heart and circulation by a maneuver which patients in bed frequently have to perform, and against which, many patients are never warned. Whenever one takes a deep breath, closes the glottis and tightens the thoracic and abdominal muscles (Valsalvas's experiment, "bearing down") there follows a series of extreme fluctuations in thoracic pressure, cardiac output, blood pressure, and in vagal and vaso-motor tone.

After a myocardial infarct, the percentage of sudden deaths occurring when patients perform this effort is higher than from any other cause. It is also a common cause of pulmonary embolism. This may happen when the patient is on the bed pan, when he is passing flatus, or sometimes when he is attempting to lift himself higher on the pillows.[10] Therefore, it is believed advisable that patients who experience difficulty in urination or defecation be let out of bed to use a commode. It has been reported that the oxygen consumption of patients who are on the bed pan is higher than in patients using a commode, than when they are left to would be at a lesser risk when using the commode, than when they are left to struggle in a recumbent position on a bed pan. *Patients must be warned against the Valsalva maneuver.*

A recently devised technic showing the hazards of the Valsalva maneuver is the radio-isotope technique for evaluation of coronary circulation.[11] The test permits safe accurate measurement of the circulation time through the coronary vascular system draining the left ventricle. Radioactive iodinated serum albumin is injected in an arm vein and the time of arrival of radioactivity over the heart is detected by means of a counter placed over a designated spot on the anterior thorax. A second counter detects arrival of the isotope in the coronory sinus by means of a cardiac catheter. The time between detection of radio-activity in the left heart and at the catheter is the transcoronary circulation time (TCT). It was found that the coronary blood flow increases as the transcoronary circulation time decreases. The Valsalva maneuver increases the transcoronary circulation time.

To place a person at complete bed rest for cardiac disease without making certain that the Valsalva maneuver is not carried out at any time, is as unsound and incongruous, as advising a patient not to do "white-collar" work, while permitting him to ascend stairs at a rapid pace. Merely ordering bed rest does not afford the patient protection from severe periodic stress on the heart and circulation, and it may put him in definite peril. If, however, complete and prolonged bed rest is considered to be indispensable for one reason or another, then it might be profitable to employ the measures necessary to diminish the dangers of bed rest. These measures should include omission or rigid curtailment of sedatives and narcotics, encouragement of deep breathing exercises, frequent changes of posture, and the acceleration of the venous return in the legs by elevating the foot of the bed, by exercise, or by reactive hyperemia produced by brief arterial compression. There is no doubt that precautions based on an understanding of phlebothrombosis, pulmonary embolism, and infarction, will markedly reduce the evil sequelae of complete and prolonged bed rest for those in whom it seems necessary in spite of its hazards.

Harrison[12] has discussed the dangers of bed rest; and Schlicter, et al[13] have reported that indiscriminate prolonged bed rest for all patients appears to be very inadvisable. *It must be emphasized that complete bed rest is a definitely hazardous and a highly unphysiologic form of therapy for patients suffering from myocardial infarction.* Complete bed rest should be ordered only when specific indications exist and it should be discontinued as soon as is reasonable.

It has been found[14] that patients not on complete bed rest maintained their physical condition better and regained their normal activity considerably sooner than patients kept under the old regimen of prolonged bed rest. The early ambulation did not appear to have been of any immediate harm to the patients. These investigators reviewed instances of unequivocal myocardial infarction treated in their clinic from the latter half of 1952 through 1954. During this period three hundred and thirty-two instances of proven coronary arterial disease with myocardial infarction were treated. Seventy-four patients died while at bed rest before ambulation was initiated. The study covers the remaining two hundred and fifty-eight patients, seventy-four of whom were female patients. The mean age of male patients was fifty-four years, of the female patients sixty-three years, and of the total series, fifty-seven years. No deaths or complications occurred among the patients in this series who were allowed to start ambulation two weeks after the onset of the infarction.

A patient with myocardial infarction is quite frequently not only in pain and distress, but is often markedly apprehensive in regard to theoutcome of his heart attack. Unnecessary bed rest and for that matter, bed rest in general, not only is hazardous to the cardiovascular system, but also may, and usually does irreparable harm to the psyche of the patient. Every device in one's armamenterium must be employed in order to bring to bear a proper psychotherapeutic approach to emotional disturbances as they arise in these patients.

The heart is an organ which is highly sensitive to emotional excitement. There exist but few individuals who can claim an immunity from this susceptibility. A long continued period of even mild anxiety renders the heart irritable, and liable to become even more excited under a relatively slight excess of emotional feeling. In cardiologic, as well as in other problems of medicine, the physician must be alert to the basic fact that all human beings possess an emotional equipment which is an integral part of their physiologic function, and which at times may dominate the whole situation. So it must be kept in mind that the human relationship is important in the treatment of patients with myocardial infarction. Three basic models of doctor-patient relationship have been described.[15] The first stage is the one of activity and passivity; here the patient is completely helpless and the physician must take command and do something for him. The second is the stage of guidance and cooperation; at this point the patient is conscious of his condition, or situation, and has ideas and feelings of his own. In this stage he is most likely to be suffering from anxiety and other distressing symptoms. He seeks aid and is willing to cooperate. The patient turns to his doctor for guidance and succor. At this point the physician is placed in a position of power by the patient. Such a position of power is due not only to a "transference reaction," i.e., his regarding the physician as he did his father or mother when he was a child, but also to the fact that the doctor possesses knowledge of his bodily processes which he does not have. The third basic model is the stage of mutual participation; it is at this time that the physician encourages the patient and teaches him to aid himself.

Studies have demonstrated that injury to the heart with its resulting incapacity,

brings with it an actual disability for about a three-month period. One of the most obvious signs noted was the overpowering feeling of helplessness which ensues with the disability, incident to the myocardial attack. These subjective symptoms produce multiple emotional responses, depending upon the reaction and vulnerability of the individual. The following responses have been noted, profound depression with feelings of futility and marked embitterment with paranoid responses to those whom the individual feels helped to bring on the attack, a catastrophic feeling of impending death, and a generally pronounced anxiety. There is hardly any person with an acute myocardial infarction who does not suffer from one or more of these emotional responses. As a result of the attack, the patient has to be deprived of certain pleasant outlets which he may have had before, such as over-eating, excessive use of tobacco, over indulgence in alchol, excessive exercise, and generally increased activity. The threat of these deprivations and the interdiction of such outlets may cause a great deal of anxiety. During his attack, he is kept quiet. This may upset the patient, and create anxiety which has to be treated by psychotherapy.

The patient feels that if he does not observe the rules and regulations set forth in his new way of living he will die. This threat to his life has to be ameliorated. As a result of such a medical "laying down of the law," he is apt to develop additional neuroses on top of the ones he may already possess. The patient will be anxious about his own welfare and will interpret any physiologic disturbance in function, or the prescription of prolonged bed rest as evidence of progressive heart disease. The counsel of a sagacious and intelligent physician will assist greatly in giving him mental rest. Anxiety and uncertainty on the physician's part, on the part of the hospital staff, and of loved ones, may result in apprehension developing to the patient. A cheerful optimistic outlook with emotional reassurance will aid markedly in dispelling fear.

The psyche plays an important symptomatic role. Through the psyche, desirable and undesirable effects upon the course of the disease may be enhanced or induced. It must be evident to the attending physician that the psychic problem induced by concern over the attack may outweigh the actual severity of the infarct. Emotional rest depends a good deal upon the attitude of the doctor, who must very definitely inspire confidence from the onset. A physician's dour look or mode of delivery of the facts of the case may induce in a nervous patient, enough fear to bring on a psychosomatic illness. A reassuring statement such as a "myocardial infarction" (heart attack) is quite like a broken arm: it heals, is valuable therapy in treating the fearful coronary patient. An uncertain, indifferent, or obviously alarmed doctor does not inspire the confidence which is necessary to offset the psychologic shock. The patient may be in great terror and believe this attack signifies the end of things sexually, financially, and physically. The patient's faith in his own future welfare is not enhanced by a medical practitioner who is ostentatiously busy, or who wears a "funereal air of wisdom." The patient's anxiety must be allayed: he must be reassured that he, like the vast majority of other

patients who have had an infarct, will make an uneventful recovery, and resume a full productive life.

In the treatment of a disease associated with emotional conflicts and anxieties, one must remember that if allowed to continue especially in unstable persons, an eventual psychoneurosis may occur. The attending physician must constantly be aware of the patient's changing state; not only of the physical illness, but of the mental state; both are important for the success of the treatment.

If and when a physician undertakes the task of psychotherapy, and there is practically no patient who does not require it, the doctor must radiate warm, comforting, and stimulating looks. The eyes are superb vehicles for conveying warm, positive affection.[16] The eyes are particularly adapted for emotional activity. The complex nervous and muscular control of the intra-ocular and extra-ocular parts provides a very fertile medium for the transmission of feelings.

The eye's emotional responses are of a receptive and expressive nature. A free transmission of affect, or of every possible emotion through these organs is present in the healthy person.[17] Reassurance is the most important aspect of psychotherapy. The patient should be handled quietly, easily, surely and confidently; and with as little fuss and feathers as possible.

The bad effects of the alarm reaction of fear and pessimism can be neutralized and even eliminated by the inculcation of the positive virtues of courage, patience, and optimism; as well as the discontinuance of bed rest as soon as feasible, as the latter is definitely hazardous both from a physical and psychologic aspect.

Summary and Conclusions

An optimistic outlook for further beneficial results appear fully justified by shortening bed rest for patients suffering from a myocardial infarction. The benefits will be both physical and mental in type. Recent experimental evidence has added new information to our knowledge of the unfavorable sequelae of complete and prolonged bed rest in patients suffering from myocardial infarction; and may well bring about a radical revision of certain long-held views. The validity of such views can be tested by experiment and experience. In the light of recent studies and findings indicating the effectiveness of curtailment of bed rest, the whole situation should be reopened. The reluctance of many physicians to accept this point of view is partly because of the lack of appreciation of the benefits to be derived by the patient; and partly because of fear of litigation, or criticism by colleagues. All these factors are drawbacks to taking the step towards shortening bed rest. In the majority of instances, however, when the procedure is well thought out and properly implemented, the results are very gratifying, not only to the physician but also to the patients.

It is well to remember that the Valsalva maneuver should be interdicted in any patient having a myocardial infarction; and that the psychotherapeutic approach is an important adjunct in the treatment of coronary arterial disease.

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	NEGATIVE	DOUBTFUL	POSITIVE
CONTROL	 Complete Lysis	 Complete Lysis	 Complete Lysis
TEST	 Complete Lysis	 Partial Lysis	 No Lysis

Reading of Eagle Complement-Fixation Test

Therapy with stimulation and substitution hormone indications

Ovarian Dysfunctions

JOSEPH B. RADDIN, M.D.
Phoenix, Arizona

There are two general types of therapy for female sex endocrine gland disorders—substitution and stimulation hormone medication.

Stimulating therapy will increase anterior pituitary gland function, as well as function of its target glands. Then the complaints caused by the hormone insufficiency due to glandular hypofunction will be "cured" or a prolonged remission obtained. The most common clinical problems encountered in adolescent girls and young women is subnormal thyroid and ovarian function. Restoration of normal female sex endocrine system glands to normal function without need for continuous medication for long periods is the goal. This means regular menstruation, fertility, sensual gratification with coitus, freedom from premenstrual tension and edema, acne, hirsutism, chronic fatigue, "nervousness," and emotional instability. Prolonged stimulating (curative) effects can be obtained with medications now available.

Whether orally, or by injection, when an estrogen, progesterone, testosterone, thyroid, and cortisone, or related adrenal cortex hormones, are used therapeutically in physiologic dosage, their effect and value is in replacement of a deficiency of the particular hormone in the individual, that is, substitution therapy. This method of medication tends to 'rest' the gland and to reduce the demand for the gland's hormone so long as its hormone is administered. Gradual withdrawal of the hormone medication is occasionally followed by eventual recovery of as much as, and at times more, function than the gland exhibited prior to starting substitution therapy. However, stopping substitution therapy regularly results in the reappearance of the same symptoms for which it was originally prescribed and sometimes in more severe form. Seldom is much curative effect obtained and long contained medication at a relatively low dose is the rule.

A brief summary of anterior pituitary gland function will clarify explanation of stimulating hormone therapy. There are at least five important anterior pituitary gland hormones:

1. ACTH (Adreno-cortico-trophic-hormone) ACTH stimulates adrenal cortex function. Its secretion by the anterior pituitary is normally regulated by the blood level of adrenal cortical hormones. When low, more ACTH is secreted which stimulates increased adrenal cortex function. When the blood level of adrenal cortex hormones is high, ACTH secretion slows or stops, thus slowing or temporarily stopping secretion of the adrenal cortex hormones[1, 2]

2. TSH (Thyroid Stimulating Hormone) TSH in pure form (Thytropar,®) has a short, intense effect for twenty-four to forty-eight hours duration. It is valuable when used with the PBI (Protein Bound Iodine) blood test, or radio-active-iodine uptake test, to evaluate the ability of the thyroid gland to respond to TSH. It differentiates primary from secondary hypothyroidism due to TSH deficiency. Pregnant mare serum hormone, (Gonadogen,® and Equinex,®) has recently been shown to have a long continued, mildly stimulating effect on thyroid gland function which is useful in obtaining a prolonged remission from hypothyroidism.[3, 4, 5, 6] TSH has no value as therapy.

3. FSH (Follicle Stimulating Hormone) FSH preparations made from pituitaries and placentas of animals, or from the urine of pregnant women (anterior pituitary-like hormones) are now available but have not been valuable clinically in stimulating ovulation in women. There is reason to believe that anti-hormones are formed so quickly and in such large amounts as to neutralize the hoped-for therapeutic qualities such preparations should possess. The gonadotropic hormone of pregnant mare's serum (Gonadogen® and Equinex®) is a clinically effective FSH preparation to stimulate ovulation and ovarian function.[5, 7]

4. L.H. (Luteinizing Hormone) Luteinizing hormone in women and ICSH (Interstitial Cell Stimulating Hormone) in men are believed to be identical. The anterior pituitary-like hormones with LH effect now available have limited use in women to stimulate ovarian function. A combination of FSH and LH effect is currently believed to cause ovulation. Actually there appears to be little clinical need for a luteinizing hormone in treatment of ovarian dysfunctions. When the ovary can be made to ovulate, almost invariably there is sufficient LH available to form a corpus lutem. Whether or not LH or a related hormone LTH stimulates the corpus lutem to secrete progestin, is clinically relatively unimportant. For most practical purposes, ovulation is regularly followed by adequate progestin secretion.[7]

5. LTH (Leuteotrophic Hormone) LTH is believed essential for the maintenance of the corpus lutem.[7]

To insure a woman's good health, anterior pituitary secretion of all its trophic hormones in adequate and balanced amounts is absolutely requisite. Administration of any of the target gland hormones disturbs this delicate anterior pituitary trophic hormone secretion balance. LTH is not commercially available.

Adrenal Cortex Hormone Therapy All the adrenal cortex hormones are therapeutically useful as substitution therapy. Stimulating effects of small dosage gradually reduced in size and frequency possibly exists. Rather than a stimulating effect, small dosage appears to assist a temporarily overburdened adrenal cortex gland meet unusual demands imposed by disease. This assistance can and should be withdrawn as rapidly as possible.

ACTH given by slow intravenous drip stimulates adrenal cortex function most effectively. Much less active clinically is ACTH gel intramuscularly. For most conditions stimulating therapy is preferable to substitution therapy because it is usually of permanent curative effect.[1, 2]

Aqueous adrenal cortex hormone preparations intravenously may be lifesaving in acute adrenal cortex failure.

Cortisone and cortisone-like hormones are known to depress ACTH secretion by the anterior pituitary, depress adrenal cortex function temporarily, and to cause actual atrophy of the adrenal cortex if long continued in large dosage.

The cortisone-like preparations are often unwisely prescribed for minor disabilities and continued for too long periods of time. Such therapy often blocks ovulation and initiates a complex train of symptoms due to hormone imbalance. Inability to reduce dosage or stop therapy because of recurrence of symptoms for which originally prescribed is usually due to depression of adrenal cortex function by the medication. The adrenal cortex hormones are useful only as substitution therapy and while they are valuable in acute illnesses, have little or no curative value. Therapy for most of the allergies is preferably one of the various antihistamine drugs in women because they have no serious side effects, nor cause depression of ovarian or adrenal cortex function. Stimulation of adrenal cortex function, without unwanted blocking of ovarian function, can be accomplished by slow intravenous drip, ACTH therapy at properly spaced intervals.[1]

Adrenal cortical hyperfunction, or storage of estradiol in fatty tissue as occurs in obesity, or administration of large doses of testosterone or estradiol blocks ovulation. This may be a primary disease due to simple hypertrophy or tumor of the adrenal cortex: or it may be secondary and simply relative—a hormone imbalance in which normal adrenal cortical function is not balanced by normal ovarian secretion of estradiol and progestin when blocked by organic disease.

Testosterone Therapy Testosterone therapy should, in my opinion, seldom be used in women before the menopause. Intravenous estrogen and progesterone is vastly superior in clinical effect to control severe and moderate menorrhagias. An oral estrogen is preferable to block temporarily ovulation in endometriosis, to dry up the breasts post-partum, and to control mild to moderately severe menopausal complaints. For premenstrual tension and edema and the mild menorrhagias, progesterone, or therapy to stimulate ovulation is preferable.

For the various annoying complaints of the climacteric which fail to respond to oral estrogens alone, long acting estrogen-progesterone mixtures by injection every 4 to 6 weeks are often superior to other types of therapy. Indicated medication for osteroporosis in menopausal women and elderly men is an estrogen-testosterone mixture. Since androgens regularly induce hirsutism in menopausal, as well as in younger women, its use must often be rstricted to small dosage for short periods of therapy. In such instances, therapy can often be continued with benefit when a mixture of Depo-Estradiol®, 5 mg. and 25 mg. progesterone in oil is used.

Ovarian Hormone Therapy (Estrogens and Progesterone) It is very important when treating symptoms due to ovarian hypofunction, to select stimulating therapy for women before the onset of their menopause (when functioning ovarian tissue is present), and to select substitution therapy for castrate and menopausal women (when there is no functioning ovarian tissue present).

The diagnosis of the presence of the natural menopausal and determination

of whether or not ovulation and ovarian function is continuing, is readily ascertained by a BBT (basal body temperature) chart.

Natural or Surgical Menopause Diagnosis of the natural menopause should be based on amenorrhoea of several months duration as well as complete failure of ovulation. The menopause is defined as the cessation of ovarian function. This may result naturally or be due to the surgical removal of the ovaries. When natural, it is due to age, usually at fifty or more years. When the natural or surgical menopause exists, substitution therapy is indicated for severe complaints. For optimal results in therapy of these complaints, progesterone and an estrogen combined therapy is preferable to an estrogen alone or estrogen and testosterone.

Stimulating therapy is not indicated since the menopausal ovary is no longer able, by definition, to respond to FSH or LH stimulation or to ovulate. During the early months of the natural or castrate menopause, FSH and LH secretion is usually high due to effort by the anterior pituitary to stimulate ovarian function. With adjustment to the menopausal state, these high blood hormone levels gradually decline.[8]

Early Menopause Menopausal-like complaints in a woman who continues to menstruate, even if irregularly, does not constitute a valid diagnosis, of "early menopause." Menopausal-like symptoms in a girl or woman before her natural menopause should be considered due to anterior pituitary dysfunction, or organic disease, causing failure of ovulation. Because these ovaries can, presumably, be restored to normal function by simulating therapy, or cure of the systemic disease which blocks ovulation, substitution therapy which blocks ovulation is definitely contra-indicated.

The Effect of Large Dosage of Estrogen on Functioning Ovaries is to Block Ovulation When an 18 or 20-year-old girl is castrated, the most effective substitution medication is often found to be 5 mg. Estradiol cyclopentyl proprionate (Depo-Estradiol,®) and 50 mg. progesterone in oil, which can be mixed in one syringe and given by intramuscular injection every two weeks, or its equivalent. Medication approaching this amount may be considered total substitution therapy.

It is well known that any estrogen in large dosage, i.e., more than 1 mg. stilboestrol daily, suppresses ovarian function in that ovulation is blocked and FSH, LH and LTH secretion by the anterior pituitary is greatly decreased or reduced to zero. This effect is obtained because administered estrogen, by artificially increasing the blood estrogen level, abolishes the stimulus to anterior pituitary secretion of FSH, LH, and LTH. Therefore, estrogens do harm rather than good in treating female sex endocrine gland hormone imbalances, often termed an "early menopause," premenstrual tension and edema, and similar complaints.[9, 18]

Endometriosis The fact that large dosage of an estrogen, 10 mg. stilboestrol or its equivalent, depresses ovulation is put to good use in the treatment of endometriosis. Endometriosis is regularly held in obeyance when ovulation is suppressed for three or four consecutive months. Stilboestrol therapy for endometriosis is harmless because ovulation usually starts soon after withdrawal of therapy. Surgery can be postponed because the girl is comfortable during and indefinitely following therapy. Such

estrogen therapy is preferable to testosterone because it avoids the common androgen effects of testosterone. Estrogen therapy can be repeated as desired with no permanent damage to the ovaries. Any procedure which will avoid castration, the only alternative, should be welcomed and conscientiously carried out. Substitution therapy for the young castrate is at best a poor substitute for normal ovaries and will be a considerable expense to the patient for many years.[10, 11]

Stimulating Effect of a Small, Daily Dose of Stilboestrol on Ovarian Function Stilboestrol in dosage not over 0.1 mg. daily has a definite stimulating effect on ovarian function due to greatly increased anterior pituitary chorionic gonadotropic hormone secretion (9). Together with thyroid in i gr. daily dosage, stilboestrol 0.1 mg. daily regularly tends to stimulate ovulation, female sex endocrine gland system function, and regular menstruation. In teenage girls, young women and older women *BEFORE* the age of fifty or the true climacteric, it is basic therapy for the menorrhagias, amenorrhoeas, and menstrual irregularities of time of onset and amount of flow. When BBT charts are followed, evidence that ovulation has been resumed often appears in three or four months. A stimulating effect rather than a substitution effect has been obtained. Such therapy is also good 'priming' if and when it is desired to administer pregnant mare serum hormone several months later.

CLINICAL INDICATIONS FOR PROGESTERONE THERAPY

Uterine Hemorrhage Intravenous estrogen therapy will temporarily stop uterine hemorrhage from almost any cause. A useful therapeutic procedure for profuse menorrhagia is to follow the intravenous estrogen (Premarin®) promptly with progesterone in oil in 50 to 100 mg. dosage intramuscularly daily for three days. Several days later a quite normal or abundant menstrual flow will ordinarily begin which may last a week or more but is self-limiting and needs no additional therapy. This amounts, clinically, to a medical D. & C. When alarmed about the amount of menstrual flow, give an additional dose or two of progesterone.[12, 20]

Medical D. & C. This use of progesterone, the so-called medical D. & C., is a valuable form of therapy when a patient refuses a surgical D. & C., when she cannot afford to go to the hospital, or when circumstances forbid her removal to a hospital. A convenient dosage is 100 mg. progesterone in oil repeated in 48 hours.[13]

Stimulating Effect of Progesterone on Ovulation 25 or 50 mg. progesterone in oil daily or on alternate days for three doses, timed just before the expected day of onset of menstruation, sometimes seems to stimulate ovulation. Used in this dosage, progesterone has no harmful side-effects. Progress can be followed on a BBT chart. Progesterone regularly causes an increase in BBT which lasts four or five days.[14]

Pregnancy Test A practical test for pregnancy is to administer two doses of 100 mg. progesterone in oil shortly before the next expected onset of menses. Should the woman be pregnant, the progesterone will tend to prevent abortion and will relieve the nausea and vomiting of early pregnancy when present. If a pregnancy does not exist, menstruation can be expected within a few days to a week.

When in doubt about pregnancy, the medical D. & C. is the pregnancy test of choice. A pregnancy will not be interrupted by the medical D & C. as it will be if a surgical D. & C. is performed.

Menorrhagia Progesterone in oil given in 50 mg. dosage intramuscularly, for three consecutive days will ordinarily stop moderate to severe menorrhagias. Therapy will be followed in a few days by a rather profuse flow which requires no therapy. Resumption of regular menstrual cycles frequently follows. Control of profuse hemorrhage is not as prompt by this method as when intravenous estrogen is used.[13, 20]

Premenstrual Edema and Tension The most effective, and most physiologic, therapy for temporary relief of premenstrual tension and edema is 50 to 100 mg. progesterone in oil intramuscularly when the symptoms first appear. The relief lasts 4 to 5 days and may then be repeated if indicated unless menstruation begins.

Threatened Abortion and Miscarriage Progesterone in oil given intramuscularly in doses of 100 to 300 mg. daily for several days will be effective in preventing abortions or miscarriages due to deficient corpus luteum of pregnancy.

Habitual Abortion Habitual abortion is a common but often unsuspected cause of infertility. Conception is normal but loss of the ovum occurs at the next menses. The BBT chart which does not show a sustained elevation of temperature following ovulation indicates need to consider the possibility of habitual abortion as the cause of the infertility. 100 mg. progesterone in oil spaced the 10th and 5th days before the expected date of onset of the next menses will often salvage the impregnated ovum.

Post-Partum Psychosis Remissions from post-partum psychosis achieved, while progesterone was being administered, were lasting. Progesterone increased the remission rate to almost 100%.[19]

Menopausal Complaints The administration of progesterone with an estrogen is often much more effective and satisfying to the woman with menopausal complaints than estrogen therapy alone.

Irregular Uterine Bleeding Obviously, if there is IRREGULAR uterine bleeding or other reason to suspect carcinoma of the cervix or uterus, a vaginal speculum examination and Papinicolau study of tissue obtained from the cervical canal and posterior vaginal fornix is indicated. Surgical D. & C. may be desirable. Menstruation, or interval bleeding induced by estrogens or withdrawal of estrogen therapy does not necessitate a surgical D. & C., or hysterectomy, or oophorectomy. Progesterone promptly controls estrogen withdrawal bleeding.

THYROID THERAPY

Hypothyroidism Thyroid U.S.P. in dosage over 3 gr. daily is believed to abolish anterior pituitary TSH secretion. Dosage in amounts of ½ to 1 grain daily for two or three months often seems to have a stimulating effect in that benefits are continued following gradual reduction and withdrawal of therapy. Personal experience with therapy for hypothyroidism suggests that Gonadogen® or Equinex® in adequate dosage stimulates thyroid function and has a prolonged stimulating effect. It has largely replaced thyroid medication for mild hypothyroidism in my practice.[5, 15, 16, 17]

Therapy to Stimulate Anterior Pituitary Gland Function and to Stimulate Ovulation The gonadotropic hormone of pregnant mare's serum (Equinex® and Gonadogen®) has been extremely valuable in my experience to stimulate secretion by the anterior pituitary gland of its tropic hormones and thus induce balanced female sex endocrine gland system function. FSH effect seems to be greatest: LH and LTH effect is adequate for most therapeutic purposes in women: TSH effect is slow but prolonged: and ACTH effect, if any, may be due to improved balance with ovarian and thyroid function. It is practically free of true allergic reactions. Too rapid administration intravenously rarely causes a reaction. When encountered, they are promptly controlled by one or two ampoules of chlortrimeton® intramuscularly or intravenously. An ampoule can be administered mixed with the horomone. It is not believed that anti-hormones are formed following administration of pregnant mare serum hormone. It is not excreted by the liver or kidney and has a prolonged stimulating effect apparently on the anterior pituitary lasting nine to twelve months and often longer. BBT charts reveal that while its action is slow, its prolonged stimulating effect will eventually induce ovulation when given in adequate amounts to women in whom a correct diagnosis has been made. It cannot stimulate ovulation blocked by systemic disease. "Priming" with stilboestrol and thyroid increases its effectiveness. Progesterone is also occasionally helpful. There are no laboratory or other tests helpful in selecing patients suitable for therapy with Gonadogen® or Equinex.® The clinical experience of the doctor appears to be vital, not only for diagnosis, but in adjusting the dosage and timing of therapy to individual cases.

Therapy to Stimulate Ovulation Therapy to stimulate ovulation, and likewise therapy for infertility due to failure of ovulation, has been, in my practise, remarkably effective, when the organic disease which blocks ovulation has been cured. There are four therapeutic aids to stimulate ovulation, any one or all of which may be helpful and indicated to secure maximum benefit depending on the duration and severity of the hypoovarianism.

1. Thyroid or Proloid® gr. 1 daily is prescribed empirically and continued indefinitely should the amenorrhoea be of long standing and hypopituitarism present.

2. Stilboestrol 0.1 mg. daily is prescribed in addition to the thyroid from the start of therapy. This is continued for several months.

3. 50 mg. progesterone in oil intramuscularly the 10th and 5th days before the expected onset of menstruation is often a valuable addition to therapy. It is especially indicated when premenstrual tension and edema is troublesome.

4. When after two or three months of stilboestrol, thyroid and progesterone "priming" therapy amenorrhoea continues, or anovular menses are suggested by the BBT chart, two doses of 50 units Gonadogen® (or 1,000 i.u Equinex®) are given intravenously 5 days apart if amenorrhoea is present. When menstruation does occur, the two doses are given on the 5th and 10th days following onset of the flow. It is unimportant whether or not the flow is continuing the day the hormone is given. Four weeks later the two injections of the hormone are repeated.

Maximum amount of therapy given has been two doses a month for three consecutive months. Then a rest period of six months or more intervenes to study the effects of the medication.

Spontaneous ovulary menstruation will ordinarily begin two or three months following. Should amenorrhoea persist, suspect adrenal cortex hyperfunction, polycystic ovaries, systemic organic disease, and rare or unusual pathology blocking ovulation.

Summary

Proper dosage of the various hormones is equally as important as proper selection of the indicated hormone.

As a general statement, substitution therapy should be used ONLY in menopausal women—those over fifty who no longer menstruate.

Women younger than fifty years, who are still menstruating, albeit irregularly, and who complain of menopausal-like symptoms often diagnosed 'early menopause', premenstrual tension and edema, amenorrhoea, and menses irregular in time of onset and in amount of flow, regularly respond well to stimulating therapy.

Treatment of amenorrhoea and other imbalances of the female sex endocrine gland system should only be stimulating, not substitution, therapy.

Therapy of sterility due to failure of ovulation is the same as for amenorrhoea due to anterior pituitary insufficiency.

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706 Professional Building

The Value of Estimating Fibrinogen and C-Reactive-Protein Levels in Myocardial Ischaemia

"Fibrinogen and C-reactive-protein levels are constantly raised soon after a myocardial infarction but are only very occasionally abnormal in patients with angina or with an old infarction. These tests are therefore reliable indices of myocardial necrosis. The estimation of fibrinogen and C-reactive-protein levels is especially valuable in cases of doubtful infarction.

"In patients with long-lasting pain at rest these tests have proved more useful than electrocardiography in confirming infarction. Electrocardiographic changes may be slight or absent, and it is often uncertain whether abnormalities, when found, are due to a recent lesion. Fibrinogen and C- reactive-protein levels have proved more sensitive indices of infarction than the E.S.R., and the E.S.R. returns more slowly to normal after infarction. Also the E.S.R. is often raised without infarction, and abnormal values have been reported in 50% of patients with angina (Riseman and Brown 1937). These tests are also useful in diagnosing complications in the weeks after an infarction, and in the differential diagnosis of chest pain due to hiatus hernia, cervical spondylosis, and gall-stones."

David Phear and Robert Stirland

The Lancet, Vol. CCXXIII, No. 6989, p. 271



LAWRENCE G. BEINHAUER, M.D.
JOHN G. GRUHN, M.D.
Pittsburgh, Pennsylvania

Eczema of Infants and Children

Eczema is a common disease of infants and children. The terms has been widely used in the past to describe virtually any non-descript superficial, inflammatory, itchy eruption both by laymen and physicians. Most parents have already made the diagnosis when they bring a child in for treatment. Specialists, however, have been engaged in controversy over just what to categorize as eczema for decades.

In recent years leading dermatologists, as Sulzberger,[1,2] Urbach and Gottlieb,[3] Epstein,[4,5] and Hill[6] have emphasized that eczema is a descriptive or morphological and not an etiologic diagnosis. The eminent von Hebra, when asked to define eczema, is credited with saying "eczema is that which looks like eczema"!

Recently Kesten[7] has reviewed her experience in a study of two thousand patients with allergic eczema encountered over a period of twenty-five years. About two-thirds of the group were less than six years of age, with the largest concentration of patients between the ages of nine and twenty-four months. Intensive inquiry disclosed that hereditary allergic, environmental, physical and psychic factors influenced the course of the disease. The tendency to develop cutaneous allergy is apparently inherited; a familial history of major allergies was obtained in eighty-five percent of these patients. The familial histories disclosed allergic rhinitis or asthma in forty percent, urticaria in thirty percent, dermatitis venenata in twelve percent and drug eruptions in four percent. In about twenty percent of the patients there was evidence of

food sensititvity; foods involved included: eggs, milk, wheat, orange, tomato, cod and potato (in young children). Older children and adults were also sensitive to nuts, fruit, chocolate, fish and certain vegetables. Positive skin tests were obtained in thirty-one percent of the patients; in addition to implicating ingested foods, positive reactions were also obtained against inhalants, fowl, domestic animal covering (hair and fur), dust, silk, ragweed, mixed grasses, pyrethrum and wool. Wool irritation was frequently noted.

Usually eczema in infants and children is etiologically an allergic dermatosis but not every eczema is the consequence of allergy and not every cutaneous allergic reaction is manifest as eczema.

Urbach and Gottlieb[3] classify eczema into eight principal groups: "(1) contact dermatitis (epidermatitis, epidermitis), (2) allergic dermatitis (due to foods, drugs), (3) neurodermatitis, (4) infantile eczema, (5) seborrheic dermatitis, (6) infectious eczematoid dermatitis, (7) metabolic dermatitis, and (8) dermatid." Hill[6] stated "what is called eczema in infancy, is just as in adults, a group of various dematoses which some time closely resemble one another. Infants have atopic, contact, seborrheic and infectious eczematoid dermatitis, eczema-like fungus infections, nummular eczema and eczematoid eruptions which do not fit into any of these categories and are impossible to classify. Although it has been called by different names at different times, atopic dermatitis is the same disease at all ages because it is as much a definite constitutional disease as epilepsy or diabetes and it may last from early infancy to middle age. It has been estimated that seventy-five percent of 'eczema' in infancy is atopic dermatitis". Epstein[4] estimated that the majority of infantile eczema, in his experience, was of the atopic type. Sulzberger is of the opinion "that atopic dermatitis is not primarily an allergic disease. Atopic dermatoses include all those affections of the skin which are characteristic of and intimately associated with atopic forms of hypersensitivity. In other words, atopic dermatoses are the cutaneous manifestations of the form of constitutional predisposition, which, in other sites, lead to the acquisition of certain common allergic diseases such as hay fever and asthma. It is by no means a new concept that there is an intimate association between asthma, hay fever and certain dermatoses, such as, infantile eczema, prurigo and disseminated neurodermatitis. However, advances made in the study of cutaneous phenomena commonly associated with atopic diseases, have made it increasingly apparent that certain cutaneous manifestations are closely analogous to reactions occurring in atopic diseases of organs other than the skin. It therefore seems advantageous to adopt nomenclature which recognizes the basic relationship of all atopic manifestations and use the name atopic dermatitis with various descriptive adjectives, rather than to adhere to the many old names which are based on consideration other than those of atopic mechanisms." Atopic dermatitis is regarded not primarily, even in the infant, as a disease of the epidermis; it is a disorder of the upper corium with secondary epidermal involvement. Thus atopy must be understood if eczema is to be understood. Atopy is a state of altered immunologic responsiveness to natural exposure by ingestion

or inhalation of foreign protein. From 7 to 10 percent of the population is atopic. These individuals inherit an increased susceptibility to sensitization which often occurs early in life. This fundamental state of altered reactivity is clinically manifested as hay fever, allergic rhinitis, asthma, urticaria, or eczema (atopic dermatitis). Cutaneous hypersensitivity is only one facet of atopy. Immunologic studies demonstrate that such patients form tissue fixing antibodies, usually found mostly in the gamma globulin fraction of serum, which cannot be demonstrated in vitro by techniques involving precipitation, agglutination or complement fixation. However, these particular antibodies, called atopic reagins, can be demonstrated by passive transfer of serum from patients to the skin of normal persons (the old Prausnitz-Küstner phenomenon). These patients often give multiple positive intradermal and scratch tests of the immediate urticarial or wheal type. On the fundamental level it is thought that the reaction depends upon the release of a histamine-like substance after the reaction of the atopin (the allergen or antigen) and the atopic reagin (the antibody) in the tissues. The target tissue or shock organ is *not* the epidermis but smooth muscle and endothelium of the superficial blood vessels of the corium in atopic dermatitis (or smooth muscle, endothelium and respiratory epithelium in asthma). The pathologist examining the acute experimental tissue reaction visualizes edema and erythema *without* necrosis, thrombosis, or fibrinoid production at the reactive site. Atopy is a constitutional state, not just a localized condition. It may last from early infancy to middle age. Ratner[8] has shown that of the multiple allergic manifestations in atopic infants, fifty percent are evident by the end of the first year and eighty percent by the fifth year. Atopic dermatitis (infantile eczema) is the presenting sign in ninety percent and the remaining ten percent usually have asthma. The term infantile eczema and atopic dermatitis overlap considerably and are often used interchangeably. From what has already been said, it should be evident that in the strict sense the former term is purely descriptive while the latter has etiologic and pathogenetic implications.

The standard textbook picture of "infantile eczema" is a crusty, oozy face. The flush areas of the cheeks are the site of predilection although the forehead, ears and distant parts of the body may be involved. The disease is usually acute at onset and in the vast majority of instances tends to disappear as the child grows older. It is often chronic and persistent, refractory to treatment and prone to relapses and recurrences.

The appearance of atopic dermatitis varies from case to case and particularly from age group to age group. In infants (to age two) it is usually an erythematous, papular, sometimes papulovesicular, oozing, weeping or crusted eruption localized principally on the head but often extending to the neck, trunk and extremities in the form of disseminated patches. As the child grows older the disease may assume one or two forms: First, a papular- "prurigo" form which consists mainly of succulent, elevated papules, covered with crusts and with a scratched central top. The favored locations are the extensor surfaces of the extremities. The second or lichenoid type, consists of small, discrete, flat-topped, brownish papules

which become confluent in many areas, presenting as plaques with sharp or ill-defined borders, beyond which are discrete scattered papules. The flexor areas, cubital and popliteal, are favored locations. In both of these the tendency to oozing and crusting is diminished or lacking. In adolescents and older individuals the lichenified form predominates. The lesions are drier and thicker; there is a tendency toward confluence into larger plaques. The prominent areas involved are the flexor aspect of the extremities, the eyelids, genitalia and the side of the neck. In all forms pruritus is a most annoying symptom especially at night; oftentimes sleep is impossible. Recurrences and exacerbations are the rule. A rare complication of atopic dematitis is the juvenile type of cataract described by Brunsting.[9]

The term infectious eczematoid dermatitis implies a cutaneous response to an infectious agent of any type. Often there is an obvious nearby source of purulent drainage such as a draining otitis media, a furuncle or discharging sinus with an eczematoid dermatitis of the adjacent skin. The relationship may be more subtle as in the situation with an "id" reaction of trichophytosis.

Contact dermatitis results from the external application of a substance of animal, vegetable, or chemical nature. It may be a non-allergic, purely local irritative effect or it may be result of altered susceptibility of the skin.

Nummular eczema refers to a form which deserves mention because of its distinct appearance, course, unknown etiology and peculiar response to therapy. It is often referred to as "parasitic or orbicular eczema." In many cases a history is elicited of preceding irritation caused by direct physical or chemical exposure based on any allergic eczematous response. In others, no such history is obtainable. In a typical case the eruption continues and runs a course which is apparently independent of external irritants or allergens. In this respect, it differs from contact dermatitis. It can appear at any age, consists of pinhead-sized papules or papulo-vesicles which become grouped, then confluent, forming coin-like nummular patches. The favorite sites are the hands, extensor surfaces of the arms, legs, and thighs. Recurrences are the rule particularly in the central areas during healing as well as in the old sites.

Seborrheic dermatitis, which may be misdiagnosed as eczema, usually begins in the scalp with irregular circinate greasy scales. "Dandruff" or pityriasis capitis is the commonest form. From the scalp it spreads to the forehead, postauricular areas, eyebrows, alae of nose, chest, interscaplar areas, umbilicus, groins and inframammary areas. Severe generalized erythroderma—Leiner's Disease—is generally regarded as a very severe variant of seborrheic dermatitis with constitutional symptoms. In this disease the mortality rate is fairly high. Mild cases of seborrheic dermatitis have a good prognosis but the disease may recur.

Drug eruptions, confusing at times, can usually be recognized by the acute onset with symmetrical lesions of brilliant red color, associated with a history of drug ingestion and disappearance of the lesions upon withdrawal of the drug.

If one wishes to follow the European nomenclature, it seems reasonable to call the condition "eczema" when it looks like eczema and "neurodermatitis" when it looks like neuroderma-

titis. As a matter of fact, uncommonly, even in infants, the morphologic appearance more closely resembles disseminated neurodermatitis than eczema. Only in infancy has atopic dermatitis been called "eczema" by the European school of dermatology because in infancy spongiosis, intraepithelial vesiculation, and consequent oozing are not uncommon; later, however, when the morphologic appearance changes, they are prone to designate it as "disseminated neurodermatitis" or "Besnier's prurigo." The localized types of neurodermatitis are seen most commonly in adults; included under this designation are the lichen chronicus simplex (localized neurodermatitis of Vidal), factitious dermatitis, and neurotic excoriations (including acne urticata and excoriated acne of young girls).

One must also keep in mind the possibility that a general medical disease may produce cutaneous metabolic reactions such as diabetes, neoplasia or blood dyscrasias especially leukemia, hormonal disorders such as myxedema, and others.

Treatment It is easier to discuss than it is to manage eczema. Management may be difficult whether the patient is treated by the family physician, pediatrician, allergist, or dermatologist. For convenience we may arbitrarily consider therapy under two broad categories: General Management of the patient and Local Treatment of the skin.

General Management We must evaluate the patient's environment as well as the condition of his skin. We hospitalize only when dramatic therapeutic measures are necessary as the vast majority of patients do well at home. Hypersensitive infants readily acquire infections prevalent in children's wards. Routine skin testing is not utilized or advocated, as the interpretation of results sometimes is difficult and confusing. A careful history of the allergic background of the patient and family often reveals valuable clues. Avoidance of common allergens as cow's milk, wheat, eggs, chocolate, tomatoes and oranges by trial and error is the most practical method of determining whether or not a food is causative or contributory to the patient's eczema.

Milk is of considerable importance as an allergen and it is in cases of ordinary atopic dermatitis that milk-free foods are of value but at present they are being used altogether too uncritically for many different kinds of skin eruption. Fries[10] has recently reviewed the diagnostic aspects of milk allergy and the role of milk substitutes. In his practice the incidence was as low as 0.3 percent although others have reported a much higher incidence. The clinically important antigens in milk are lactalbumins and casein. Clinical and cutaneous sensitivity occurs most frequently to lactalbumin.[11] Boiling milk or preparing evaporated milk denatures this protein and greatly reduces its antigenicity, hence boiled or evaporated milk may serve as a substitute for whole milk. Furthermore, lactalbumin is a species specific protein, hence substitution of goat's milk may be of value. Casein, however, is a heat stable protein, common to all animal milk. True casein sensitivity, which is rare, requires elimination of all animal milks and substitution of soy-bean milk (Sobee® or Mull-Soy®) or a hydrolyzed casein mixture (Nutramigen®). Non-mammalian milks may fail to supply certain essential nutrients and may provoke very troublesome gastro-intestinal disturbances es-

pecially diarrhea. Wherever possible, nutrition should be maintained with mammalian derived milks; substitutes should never be employed injudiciously without clear proof that mammalian milk cannot be tolerated. Since infants are known to spontaneously lose sensitivity to cow's milk, it should be re-tried at reasonably frequent intervals after it has been eliminated. Inasmuch as the change from milk to milk-free food is a radical one, Hill[6] does not feed an eczematous infant milk-free foods unless the skin test with milk is positive. He further advises "a low fat, high protein diet has some value especially in those patients with a complicated seborrheic basis and also because it is not uncommon for a low serum protein level to develop with troublesome edema most likely due to a large loss of nitrogen from excessive scaling. Such a diet is accomplished by using a partly skimmed milk with addition to three to four tablespoons of Calcium Caseinate (Casec®) to one quart (45-60 cc. per 1,000 cc.). The rest of the diet consists of oats or rice, string beans, carrots, squash, pipe banana, prune pulp and apple sauce; a multi-vitamin preparation and ascorbic acid. These babies are in for a long siege of sickness, and it is of the utmost importance that they get an adequate diet which they can digest and upon which they can thrive. A milk-free food, say as soy-bean preparations (Mull-Soy® and Sobee®) or a predigested protein preparation (Nutramigen®) should not be used; it does them no good and may do harm by causing diarrhea. An atopic erythrodermia is not due to milk sensitivity and a milk free diet will not cure it. It is best, however, to feed these babies no wheat or eggs and to use a simple diet containing relatively few foods. More good will accrue by keeping them in a thriving state of nutrition and by a vigorous and persistent attack against skin and focal infection than by any other measures. There will be no quick cure, no matter what is done." If the eruption clears on any elimination regime, a new food may be added at four to seven day intervals and the effects noted. Desensitization may then be attempted by feeding small amounts of the suspected food and very slowly and gradually increasing the amounts to be fed.

If the eruption appears toward the end of the first year and involves the flexors of the arms and legs rather than the face it would be advantageous to check environmental factors. These include pets with hair, fur or feathers, wool, silk, clothing materials including dyes, laundering agents, housedust and others. In refractory cases, it may be helpful to insist on a dust-free environment by removing all curtains, rugs and upholstery; by insisting on bare walls and linoleum covered floors; by banishing hair filled toys; eliminating all baby creams, lotions, and substituting a solitary bland agent such as cornstarch or petrolatum; and by special covering of bedding especially mattresses and pillows.

Sources of bacterial or other infections such as rhinitis or otitis should be sought for and eliminated. The possibility of associated bacterial sensitivity should never be overlooked.

Psychosomatic disturbances require evaluation and therapy. Dramatic improvement sometimes occurs following removal of the child from home to the hospital and is sometimes attributed to release from tension associated with parental oversolicitude or the substitu-

tion of tender loving care by nurses for parental neglect. It is more probable that complete shift from an offending allergic environment deserves the credit. Nevertheless, since the skin of even the tiny infant may well be the mirror reflecting his psyche, it is well to probe this area. Thus use of steroid therapy orally and parenterally deserves special mention. It is the consensus of opinion that these drugs should be used only after careful selection and with special indication. They are especially valuable when dramatic or even life saving measures are necessary. The dosage must be adequate to control all symptoms and the drug must be withdrawn gradually to effect a therapeutic response without precipitating a recurrence. It is well to remember, should viral infection complicate the picture when steroid therapy is being given, increased dosage must not be given.

Restraints may be necessary to prevent vigorous excoriation of pruritic lesions but are not advocated as a routine procedure.

Local Therapy Skillful local treatment does more good than anything else. Local therapy is that which is used to soothe and protect the inflammed skin or control the symptoms of itching and burning.

The type of therapy depends upon the appearance of the skin. Weeping, erythematous, vesiculated, crusted lesions are acute. Acute lesions are treated with wet dressings, such as:

2% boric acid solution
Potassium permanganate 1/10,000 dilution
Burow's solution 1/30 dilution
Silver Nitrate 0.1%

These may be applied for twenty minutes every four hours. Constant wet dressings have macerating effects; they may be used when absolutely necessary, but for periods not longer than 24 or 48 hours. During the acute exudative phase, powders or drying locations should not be used.

When infection is present wet dressings may be alternated with Vioform or bacitracin — Neosporin or Polysporin ointments. Pencillin and sulfonamides may cause complicating drug hypersensitivities of the skin.

After acute exudation and vesiculation have subsided calamine liniment or lotion may be used.

Collodial baths are also well tolerated. Preceding the bath it is permissible to use soap to remove purulent material and debris. Following the bath medication is applied and the affected parts may be protected by soft white bandages or light cotton clothing.

In the subacute stages, emulsions, liniments, pastes and oil in water bases are recommended. Lotions alone have drying effects. A favorite emulsion consists of

alum acetate soln	10.0
zinc oxide) a.a.	30.0
talc)	30.0
olive oil	120.0
lime water q.s.	240.0

To such emulsions or calamine liniment may be added one or more of several antipruritics:

menthol	1/6 to 1/4%
camphor	1%
phenol	1%
liquid tar	3%

We assiduously avoid adding antihistaminics, sulfonamides antibiotics and benzocaine since these products themselves often cause skin reactions and it is confusing to superimpose a drug sensitivity on an existing eczema.

When the chronic stage is reached, and the skin is thick, leathery, dry and infiltrated or icthyotic, ointments and pastes are most serviceable. U.S.P. Ung. Zinc Oxide or plain Lassar's paste are old favorites. To these may be added medicants such as:

naftalan—crude coal tar (washed) most effective at	1 to 10%
salicylic acid	1 to 5%
ichthyol	1 to 5%
sulfur	1 to 5%

It is wise to start with low concentrations of these medicants and to reduce the percentage if the lesions are bandaged.

It is also well to remember that chronic lichenification may be aggravated by greases such as petrolatum.

Ointments or pastes may be removed q.d. or b.i.d. with olive oil before reapplication of fresh medication. For patients with exceptionally dry or ichthyotic skin, soda bicarbonate—nivea oil baths are beneficial.

In the subacute and chronic stages, ultraviolet irradiation is often beneficial. Allergic eczema tends to improve when the skin is well tanned. Sunbathing especially at the seashore is recommended when feasible. The tanning should be maintained as long as possible. When sunbathing is not feasible, judicious use of the ultraviolet lamp may be beneficial.

Roentgen irradition is not used in the acute and subacute stages. In rare selected cases dermatologists experienced in radiotherapy may treat chronic stages with a few applications of very small doses.

Recently the topical application of hydrocortisone and related steroids with or without combination with non-sensitizing antibiotics has gained deserved prominence because of their effectiveness in controlling local reactions while they are being used.

On empiric grounds,[2] one of us (L.G.B.) has used immune gamma globulin in addition to standard therapy in a group of eight patients with infected infantile and atopic eczema. Cases so treated responded most satisfactorily. Dosage given was two cubic centimeters twice weekly for a total dosage of sixteen to twenty-four cubic centimeters. Three patients have remained clear over an observation period of four months; less severe recurrences developed in the remainder after four to eight weeks.

It is helpful to remember that most patients may outgrow the minor attacks. A considerable number of cases of mild infantile eczema respond to local therapy alone. Since we cannot predetermine which course the child may follow, it behooves us to treat all children so afflicted with scrupulous attention. Good treatment of a child with eczema offers the best chance of converting a hypersensitive state to one of relative immunity before the skin becomes chronically irritable and deleterious habit patterns of scratching become fixed.

Failure to achieve remission may be due to failure to eliminate offending allergens, the superimposition of additional factors causing dermatitis, inadequate therapy, or even because of mistaken diagnosis. Sometimes what looks like eczema is *not* eczema! Chronic refactory cases are wisely referred to the most knowledgeable available consultant.

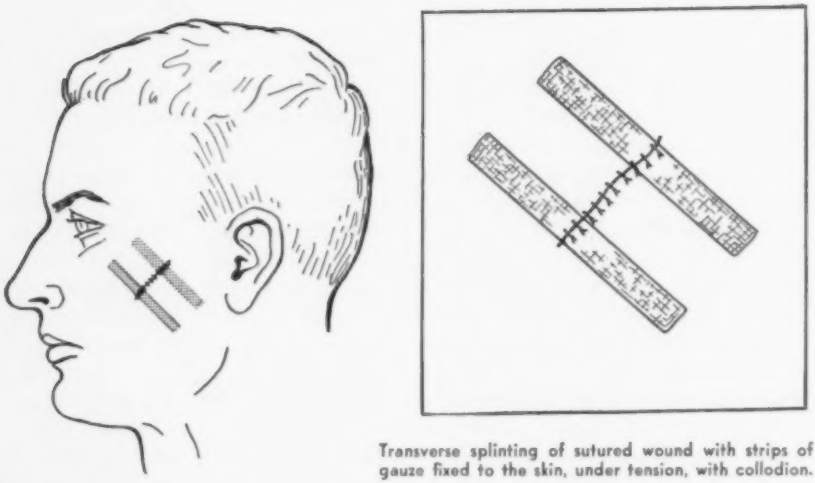
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5026 Jenkins Arcade

Clini-Clipping



Transverse splinting of sutured wound with strips of gauze fixed to the skin, under tension, with collodion.

Clinico-Pathological Conference

Akron City Hospital

A 35-year-old white woman entered the hospital complaining of pain in the legs.

The patient stated that for three weeks she had felt weak and tired and had noticed afternoon and night sweats. At the same time she developed sharp pains in both legs, but predominantly in the right, extending from the hips to the ankles in varying and irregular pattern. There were also several episodes of cramp-like lower abdominal pain. These symptoms were relieved by codeine and aspirin.

There was a history of infectious mononucleosis six years before. Otherwise, the past medical history was essentially negative.

Examination Physical examination revealed a well-developed, well-nourished, alert white woman in no acute distress. Temperature was 102.6°F, pulse rate 106 per minute, respiratory rate 28 per minute and blood pressure 112/70 mm Hg. The skin was warm and dry. The head and neck were essentially negative. The lungs were clear.

The heart was slightly enlarged to the left. There was normal sinus rhythm with an apical rate of 106 per minute. A very soft grade I systolic murmur was heard at the apex. The first mitral sound was accentuated. The second pulmonic sound was more prominent than the second aortic.

The liver was palpable one finger-breadth beneath the right costal margin and was non tender. There were palpable non tender bilateral inguinal lymph nodes. Pelvic and rectal examinations were negative. The extremities were negative with no demonstrable weakness, tenderness, or limitation of motion. Neurological examination was not remarkable.

Laboratory The red blood count was 3,220,000 per cu. mm. with 9.5 gm. of hemoglobin (62%). The white blood count was 7,800 with 69% neutrophils and 31% lymphocytes. The sedimentation rate was 60 mm. in 60 minutes. The urine was slightly cloudy, yellow

and acid, with specific gravity of 1.022, and negative for albumin and sugar. The urinary sediment contained 1-2 epithelial cells per high-power field. The VDRL test was nonreactive. Two skin tests for trichinosis were negative. Repeated smears for L. E. cells were negative. The heterophile agglutinin titer was 1:7. C-reactive protein was 4 plus and antistreptolysin 0 titer 12 Todd units. The serum rheumatoid agglutination test was negative. Serum agglutinations for Brucella, typhoid and paratyphoid were negative.

A lumbar puncture was done and clear cerebrospinal fluid was obtained. The test for globulin was negative. The total protein was 15.5, sugar 53 and chlorides were 717.6 mg%. The cell count was 0 per cu mm. A culture was later reported as negative.

The patient was given symptomatic treatment. The temperature varied daily from 100° to 102°F. A second examiner found definite weakness in the muscles of the right leg. The deep tendon reflexes in the right leg and arm and the superficial abdominal reflexes on the right side were decreased. The spine was described as rigid, especially in the lower thoracic and lumbar segments.

Repeated blood counts and sedimentation rates yielded results similar to those given above. Three blood cultures produced no growth.

Several blood smears were negative for malaria. Smears for lead stippling were negative. Serum protein was 5.6 gm% with an A/G ratio of 3.3/1 and the protein-bound iodine was 4.8 micrograms percent. The tests for cold agglutinins and cephalin flocculation were negative.

Impression An electrocardiogram revealed regular sinus rhythm with auricular rate of 112 per minute, PR interval of .16 and QRS interval of .06. Impression: "Position of heart is vertical. Sinus tachycardia. Normal electrocardiogram with marked counter-clockwise rotation."

A muscle biopsy was performed and was reported as negative.

The patient was given prednisone (later changed to hydrocortisone), whole blood and meperidine. Approximately six weeks following admission a palpable lymph node in the left submandibular region was noticed for the first time.

On the 46th hospital day an operation was performed.

Discussion DR. MARVIN J. SAKOL: This is the protocol of a 35-year-old woman with a three-week history of pain in the legs, anemia, reticuloendothelial hyperplasia and fever.

Pain in the extremities can be caused by pathological process in the bones, joints and periarticular structures, muscles, nerves, blood and lymph vessels or skin, or it can be referred from a diseased viscus. On the first examination no neurological abnormalities were discovered, but a second and presumably later examiner found definite weakness in the muscles of the right leg and arm and decrease of the superficial abdominal reflexes. This would tend to place the pathological process in the bone, either localized or systemic, or in the nervous system. These sites are not mutually exclusive.

I shall come back to the neurological findings in a moment, but I thing that at this point the x-rays may offer some help.

DR. FREDERICK A. RUOFF: The lumbar spine and pelvic films fail to reveal any gross architectural change, infiltra-

tive lesion or local areas of demineralization of the bone. There are, however, arthritic changes of the sacroiliac junction and of the lumbosacral junction.

There is space narrowing and also hypertrophic spurring of the lumbosacral junction, particularly on the left, and the sacroiliac joints show moderately advanced hypertrophic arthritis with sclerosis of the iliac margins of the articulations.

On the abdominal film, which is included in our lumbosacral study, no tumor masses are identified. The kidney outlines appear normal. The liver is not enlarged; however, it does approach the iliac crest. The spleen is not enlarged. There are no abnormal calcifications.

The P-A stereo and lateral projections of the chest show mild increase of the markings into the bases of the lungs, but there is no evidence of any acute process in the lung fields. No infiltrative lesions are found. The vascular shadows and the peribronchial changes are normal for a patient of this age. The heart is not enlarged and the great vessel shadows are not unusual. Diaphragms show a normal contour. The rib cage shows no evidence of infiltration. The scapula and shoulder girdle are normal. The trachea is in the midline. No soft tissue tumors or calcifications are seen in the neck.

Anemia DR. SAKOL: I intend to come back to the neurological findings in a bit, but let's leave them for a moment and take up the problem of the anemia. As I have said many times, probably all changes in the human body are reflected in the blood. Some of them are too subtle for us to utilize in diagnosis, but by the time you find anything as gross as anemia your best chance for diagnosis is by investigation of the anemia.

This from the data presented is a normochromic, normocytic anemia, the causes for which are a sudden loss of blood, destruction of blood or lack of blood formation.

In this case we can forget the first, the sudden loss of blood, for lack of evidence. There is no evidence of increased blood destruction, such as jaundice, increased serum bilirubin, or increased urinary or fecal urobilinogen, nor of the increased production which often accompanies increased destruction, such as polychromasia, reticulocytosis or bone marrow normoblastosis.

Leukemia Thus by exclusion or lack of evidence we are left with anemia due to a lack of blood formation. This type of anemia is made up basically of three major groups, the aplastic-hypoplastic group, the simple chronic anemia associated with various systemic diseases, especially renal disease, tuberculosis, malignancy and chronic infections, and the "myelophthisic" anemias (which probably are not truly myelophthisic in nature) resulting from metastatic carcinoma, lymphomas and leukemias.

Myelosclerosis and marble bone disease I omit because of the lack of splenomegaly and the x-ray findings. The absence of a leukoerythroblastic blood picture militates against a metastatic carcinoma but does not completely rule it out. Because no mention is made of petechiae or purpura, and no platelet counts are given, and since the white count is normal, I am forced to rule out aplastic anemias, except perhaps the rare pure red-cell aplasia, leaving for serious consideration in this group only leukemias, lymphomas and a chronic infectious process such as tuberculosis.

Since no bone marrow report is included, we cannot make the diagnosis of leukemia.

Lupus Another disease which might also fit the picture is disseminated lupus erythematosus, which may present such signs as irregular fever, glandular enlargement, hepatic enlargement and anemia.

However, cardiac manifestations, leukopenia, renal damage and joint involvement, at least one of which should be found, are absent here, and furthermore no L.E. cells are demonstrated.

Lymphoma One more aid to diagnosis is available, the lymphadenopathy. Although I am seldom impressed by inguinal adenopathy, the presence of a new enlarged single node, particularly a firm, non tender one, is of great significance, and immediately brings to mind that group of lymph node diseases thought by some to be neoplastic and by others to be infectious, namely the lymphomas.

These include reticulum cell sarcoma, lymphosarcoma (either lymphoblastic or lymphocytic), Hodgkin's disease, giant follicular lymphoma, clasmatocytic lymphoma, monocytoma and Hodgkin's sarcoma. Whether any fundamental difference exists among members of this group, especially between lymphosarcoma and leukemia, is somewhat doubtful, because many will have at least a transient leukemic phase at one time or another, particularly if x-ray therapy has been given.

It is possible in this case that the illness called infectious mononucleosis six years before could have been a transient leukemic phase of a lymphoma, with a spontaneous remission.

Node Enlargement In the differential diagnosis of lymph node enlargement we must consider in addition acute lymphadenitis, tuberculosis, syphilis, infectious mononucleosis, leukemia and metastatic carcinoma.

The absence of an infected focus in the neighborhood of the affected glands as well as the absence of tenderness and local heat pretty well rule out local causes of adenopathy in this case. We have nothing on which to base a diagnosis of syphilis. I have never seen a patient with infectious mononucleosis this sick for so long. Tuberculosis is quite possible, especially since the submandibular area is involved. The absence of chest findings is against this diagnosis, as is the absence of calcification in the node, but this does not entirely rule it out. A tuberculin skin test might have been helpful.

Boeck's sarcoid bears a great clinical resemblance to Hodgkin's disease as well as to tuberculosis, but anemia is uncommon, and in the present case there are no miliary pulmonary findings, the eyes and the lacrimal and parotid glands are not involved and no punched-out areas in the small bones are reported. The serum proteins also were not elevated. All of these things are against the diagnosis of sarcoid, but still do not positively rule it out.

Most Common Now, how can we tie things together to arrive at a reasonable diagnosis? You will notice throughout the discussion of possibilities three things keep popping up which are never decisively ruled out, namely tuberculosis, metastatic malignancy and lymphoma. Any can attack the central nervous system, cause anemia or produce reticuloendothelial hyperplasia and may pursue a febrile course.

The most common disease of the vertebral bodies with nervous system

involvement is probably tuberculosis. It may lead to partial destruction and collapse, particularly of the anterior part of the vertebrae, with resulting gibbus. Usually there is local tenderness during the active process. As mentioned before, there is evidence against tuberculosis in this case, but it is not decisively ruled out.

Malignant Second in frequency is metastatic carcinoma. It is important to note that osteophytes, signs of hypertrophic osteoarthrosis of the spine, are often formed on the anterior surface of a vertebra bearing a small metastatic cancer. Most frequently the primary site is in the breast, kidney or lung, and no corroborating evidence for these sites is offered in the protocol.

Lymphoma may involve either the verterbrae directly or the central nervous system or both. It does so in from 10 to 25 percent of cases. In some there is a direct invasion of the vertebrae from lymph nodes adjacent to the spine. This may cause vertebral collapse and direct mechanical pressure upon the cord. More commonly, extension occurs from retroperitoneal, mediastinal and intrathoracic masses by way of the lymph spaces of the nerve roots through the intervertebral foramina and into the epidural space. Large epidural deposits of lymphoid tissue can completely or partially encircle the cord and produce compression.

In some cases, and probably much more commonly than has been appreciated, mechanical obstruction of vessels may occlude the blood supply and produce thrombosis and myelomalacia. Most epidural lesions fall into this group.

This is the reason why, when epidural masses produce paraplegia, even though the mass is removed, the patient usually does not walk again, or at least is not completely cured.

Sparling and others have emphasized that the rapid development, within a few days to a few months, of a paraplegia with corresponding sensory loss in association with pain in the back or radicular pains should always suggest the possibility of a spinal epidural lesion of a lymphomatous nature.

In summary, then, I believe that this woman had as her primary disease a malignant lymphoma. The differentiation of the lymphomas is a microscopic problem rather than a clinical problem.

Fever DR. SIMON A. SCHLUETER: How do you account for the constant daily fever?

DR. SAKOL: Whenever a lymphoma is generalized, particularly when bone marrow involvement is present, fever is almost a universal accompaniment. Now it's true that in many cases there is the so-called Pel-Ebstein type of fever. The patient remains febrile for ten days, a couple of weeks or a little longer, then is afebrile, and then has recurrence of the fever. But in many cases, once the disease has become disseminated the fever remains continuous, usually with afternoon spikes. This is an ominous prognostic sign.

DR. ALEXANDER P. ORMOND: What would your diagnosis have been if you had not had the appearance of this submandibular lymph node?

DR. SAKOL: Any time there is a normochromic, normocytic anemia or a macrocytic anemia, a bone marrow examination must be done. In view of the constant febrile course that this woman had, I feel very definitely that, on supravital staining at least, lymphomatous cells would have been found in the bone

marrow, and my diagnosis probably would have been the same.

Dr. H. Willard Allison: I would like to ask why you have not mentioned subacute bacterial endocarditis as a possibility, and also whether you consider multiple myeloma.

Evidence Dr. Sakol: I did consider both those diagnoses. I eliminated subacute bacterial endocarditis because of lack of evidence of embolic phenomena, because the cardiac findings as recorded in the protocol did not impress me as being indicative of any heart disease and because the spleen was not enlarged.

Multiple myeloma I considered also. If this had been the protocol of a 75-year-old man with virtually the same history, I would have considered it very strongly. A woman of 35 is definitely out of the usual age group with multiple myeloma. However, being basically a lumper rather than a splitter, I would consider multiple myeloma as a form of subleukemic plasma cell leukemia and thus not too far different from the conditions mentioned.

Dr. H. Vern Sharp: Do you think that in view of the neurologic changes there might have been a change also in the spinal fluid?

Dr. Sakol: When there is a complete block of the spinal fluid, usually one finds an increase in protein, pleocytosis and xanthochromasia. In the presence of an epidural mass causing only partial occlusion or with resulting thrombosis of the vessels and myelomalacia, or with definite infiltration into the cord, there may be no diagnostic spinal fluid changes. Later spinal fluid examinations might have shown some changes.

Dr. Earl C. Hershberger: Do you think a patient could have had miliary tuberculosis? Perhaps there was breakdown of a tuberculous lymph node, or there was some other caseous lesion such as in the lumbar spine, with periosteal spread up the vertebral column producing the back spasm, and then a lymphatic and hematogenous spread. The chest films are negative, but early miliary tuberculosis often cannot be recognized by x-ray examination.

Incomplete Dr. Sakol: In hematologic disease, tuberculosis is as much the great mimicker as syphilis used to be in general internal diseases. As I mentioned in the discussion, I was never able to eliminate tuberculosis completely. Some of the things that would have helped to establish that diagnosis would have been a tuberculin skin test or demonstration of the tubercle bacillus. The chest x-ray of course did not demonstrate any tuberculosis. Only on this basis and on the basis of probability did I eliminate tuberculosis in favor of a lymphoma but it's true that tuberculosis always fits into the differential diagnosis.

Dr. Robert A. McDougal: Would the low serum globulin and total protein be against the diagnosis of lymphoma?

Dr. Sakol: It certainly wouldn't direct your attention to a lymphoma. In lymphomas, however, the serum proteins are not rarely lowered because of hypoalbuminemia, but will usually fall into the normal range. Of course it would be nice from a diagnostic viewpoint to have an elevated serum globulin, but all patients do not fit into the same picture.

Procedure Dr. Lloyd Catron: The operation performed was excision of the enlarged left submandibular lymph node. A node 2 by 1.5 by 1 cm. was removed. Microscopically it proved to be a large-celled lymphoblastoma (lympho-

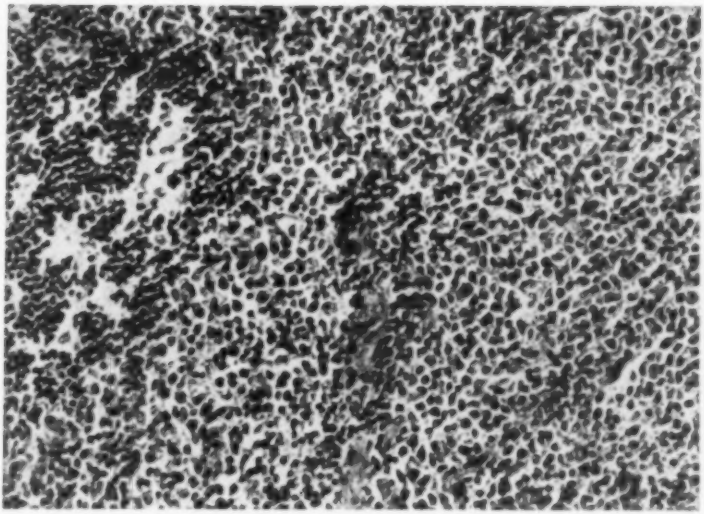


Fig. 1. Lymphoblastomatous transformation of submandibular lymph node. Some of the few remaining small lymphoycytes appear at the upper left.

Fig. 2. Portal zone in the liver with hepatic cord cells on the right. High power view of neoplastic infiltration.

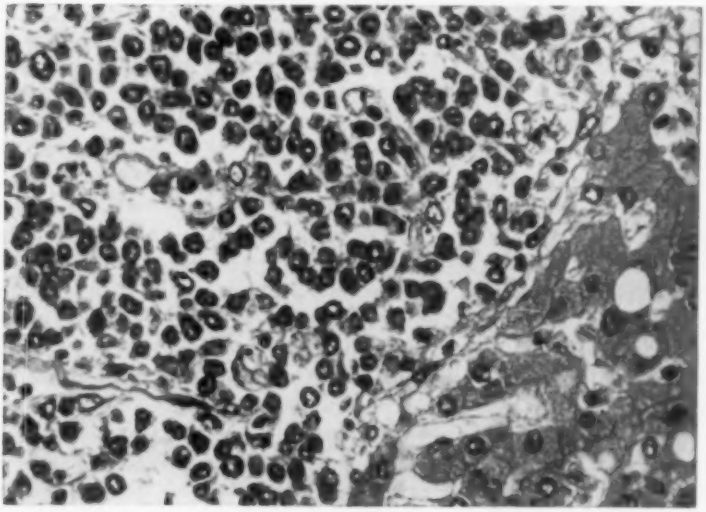
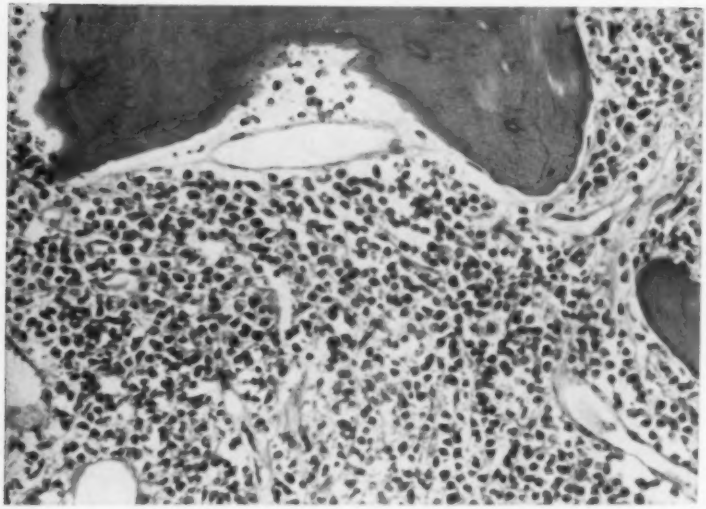


Fig. 3—Lymphoblastomatous replacement of sternal bone marrow.



blastic lymphosarcoma) *(Fig. 1)*. There was almost complete destruction of normal architecture with infiltration beyond the capsule.

The patient received 25 mg. of nitrogen mustard intravenously. She was under x-ray treatment when it was found that the white count had fallen to 850 and the platelet count to 30,000 per cu. mm., and so the treatment was discontinued.

Later x-ray films disclosed rarefaction, rather widespread but spotty in the bony pelvis. A sternal marrow examination revealed neoplastic cells, very largely necrotic with practically no normal bone marrow cells found in the portions examined. The patient was sent home on prednisone and one of the newer sulpha drugs. Terminally there were signs of involvement of the cranial nerves, both sensory and motor. The patient died four months after entering the hospital.

Autopsy At autopsy the skin was pale except for moderately extensive hemorrhages in the sacral region and in the thighs. The lymphoblastomatous infiltration was most massive in the abdominal and pelvic retroperitoneal tissues. Enlarged, matted lymph nodes and infiltrated supporting tissues formed plaques extending 6 to 8 cm. bilaterally from the midline. The bony pelvis, spine, sternum and ribs were extensively involved, with formation of irregular neoplastic excrescences. No subdural infiltration or compression of the spinal cord was found. The extent of cranial involvement could not be determined because permission to examine the head was denied.

The liver was slightly enlarged, weighing 1980 gm. Infiltrations occurred chiefly in the portal regions *(Fig. 2)*, but some had become confluent and had replaced groups of hepatic lobules, with extensive necrosis.

The spleen weighed 190 gm. Small clusters of tumor cells were found in

the Malpighian bodies. In addition, there were moderately extensive hemosiderosis and slight extramedullary hematopoiesis.

Lymphomatous infiltrations caused stiffening of the gastric wall with formation of giant rugae. Similar but smaller lesions were found in the small intestine, and there was minor involvment of the adrenals and the kidneys.

DR. SAKOL: The use of nitrogen mustard was of course the treatment of choice. The course of the disease was somewhat typical for a lymphoma of the lymphosarcomatous type, except perhaps for one thing. The fact that this woman did not respond to nitrogen mustard or to x-ray therapy suggests that at least a component of this may have been reticulum cell sarcoma. In other words, most lymphosarcomas will respond fairly well for a short period of time. However, the reticulum cell sarcoma group does not respond to these medications as well. In such cases it may be worth a trial of 6-mercaptopurine. In addition, I presume that this case occurred before the availability of CB 1348 (chlorambucil). Certainly at present we probably would have given her a trial on this at some stage of the disease.

Systemic Disease DR. ORMOND: I saw this patient in consultation and she was a very interesting problem. Here we have a young woman who had a systemic disease which began with myalgia, arthralgia, fever, malaise and weight loss. She had a normochromic, normocytic anemia, an elevated sedimentation rate and many findings that pointed toward one of the collagen diseases, particularly systemic lupus erythematosus. The fact that she did not have a positive L.E. cell test is unimportant because only 60 percent of proven cases of systemic lupus have positive L.E. tests.

The albumin-globulin ratio in the blood was not reversed as it is in the collagen diseases. The random biopsy of the muscle of the leg was negative, but it is positive only in 8 percent of proven cases. When you take a biopsy from an actual lesion of arteritis or systemic lupus you will have a diagnostic biopsy in only 40 percent of proven cases. Central nervous system disorders may be early manifestations of a collagen disease. Until the appearance of this lymph node under the mandible we had no evidence of lymphoma, although we looked for lymph nodes and an enlarged spleen repeatedly.

We are up against a problem of treatment which is yet unsolved. This case is an example of the futility of the chemical and radiologic treatment of acute lymphomas. Treatment is more theoretical than practical.

DR. SAKOL: Just one comment on the theoretical versus the practical aspect of the treatment of lymphomas. Certainly one must realize that there are many diseases that we don't cure. We don't cure diabetes. We don't cure pernicious anemia. There is a host of diseases we don't cure. But if you can give a patient a comfortable, happy productive existence, whether for a few months or many years, it is very worthwhile.

There are a few lymphomas, particularly of the reticulum cell group, that will not respond to any treatment. The vast majority, however, will respond for a period of time, and because we never know when the "cure" will be coming along, I think that you have to treat all of these people when they have symptoms.

ANTIBIOTICS



Moderator:

DR. BERNARD PINES

Director of Surgery, Adelphi Hospital, Brooklyn, New York.

Panel:

DR. MAXWELL FINLAND

Department of Medicine, Harvard Medical School, and the Thorndike Memorial Laboratory, Boston City Hospital, Boston, Mass.

DR. PERRIN H. LONG

Department of Medicine, College of Medicine at New York City, State University of New York, and the Kings County Hospital, Brooklyn 3, N. Y.

LT. COL. E. J. PULASKI, MC, USA

Chief of Surgical Service, Letterman Army Hospital, The Presidio, San Francisco, California.

DR. KENNETH M. SCHRECK

Department of Bacteriology, Temple University Medical School, Philadelphia 40, Pa.

Dr. Pines: We are honored tonight in having a very eminent group of panelists who are undoubtedly authorities in the field of antibiotics, having contributed extensively to every aspect of the field, especially to the clinical uses. I think we're going to have a very interesting evening, because the panelists are known to take their gloves off and to give and take when need be. Dr. Kenneth Schreck, the first panelist to the left, is assistant professor of microbiology at Temple University, and is pinch-hitting for Dr. Casswell. Our next panelist is Dr. Maxwell Finland, who is very frequently called the dean of antibiotic therapy in the country and actually in the world. He is associate director of Thorndike Memorial in Boston. Then we have Dr. Perrin Long, who is professor and chairman of the department of medicine at our State Uni-

A Panel Discussion Held at the Adelphi Hospital Brooklyn, N. Y.

versity. He needs no introduction. And finally, Col. Edwin Pulaski, who is with us now for the third time. The first time in 1946, then in 1954; and, as he says, he finds this almost home.

It's a foregone conclusion that we can't cover every phase of antibiotics, and the use of antibiotics; but we're going to try to touch on some of the very pertinent, salient, and discussable factors of the day. We've arranged for an informal and unrehearsed discussion during which time the panelists will give us at first a simple five minute summary of one phase of antibiotic therapy. Then these phases will be discussed. They will also allow a few minutes for questions from the audience. We're supplying paper and pencil for the purpose of writing those questions down. They may be directed either to a specific individual, or to the entire panel.

Recently our antibiotic committee of the hospital had an opportunity to survey a thousand cases. Actually, these cases were consecutive admissions to the hospital. To briefly get a bird's eye view as to the nature of antibiotic therapy in this institution, I'll just spend two minutes on this phase of it. In the thousand cases, half of them, almost five hundred, received one or more antibiotics during the course of their stay in the institution. The agents used were penicillin in three hundred instances; Combiotic in one hundred thirty four; Achromycin, for ninety-eight patients; streptomycin and Tetracycline in twenty six. The remainder are just scattered uses of the other antibiotics. In one third of the cases combined or multiple antibiotics were used (anywhere from two to eight in number) at different intervals of the patient's stay in the hospital. Sometimes there was taken into consideration the synergistic effect of the antibiotics. Very often the fact that the antibiotics were not synergistic, or acted indifferently, or that some might react antagonistically were not taken into consideration.

It was interesting to note that there were four percent of allergic reactions in these patients. These were not severe. These patients were initially, most of them, known to be allergic. The incidence of infection was one point nine percent. Within these infections the predominent organism was *Micrococcus pyogenes* or, that is, a *Staphylococcus aureus* or *albus*. In ninety percent of the cases this organism was penicillin resistant. All of the organisms were sensitive either to Chloromycetin,

erythromycin, or to the tetracycline group of antimicrobial agents. I mention this in view of the recent literature on the subject, which shows that antimicrobial therapy is not in a static condition. It is constantly on the move. There are changes. There are changes not only in the initiation of new antibiotics, and, coincidental with them, the new reactions which we have to look for, but there are also resistant organisms to consider, cross resistance, the subject of combined therapy and its value, the paradoxical increase of staphylococcic infections, in spite of or because of the use of antibiotics. There also is a new picture in the light of the terminologies which one finds in looking through the literature. The new picture includes such terminologies as cross infection, super infection, cross resistance, synergism, and so on.

We have a group of panelists who will, I am sure, give us a view of this new look in antibiotics. I will first call on Dr. Pulaski, who will briefly discuss some of the prophylactic uses of antibiotics; their possibilities, limitations, and hazards.

Col. Pulaski: Dr. Marcus, Dr. Pines, ladies and gentlemen: Let me say once again what a pleasure it is to be afforded the privilege of this third "homecoming" to Adelphi Hospital. The problem of prophylactic antibiotic therapy is a broad one and no final answers can be given at this time as to absolute indications. To go back a bit, the various antibiotics now in use have brought spectacular changes in the treatment and prognosis of many formerly disabling infections, especially those due to hemolytic streptococci, pneumococci, as well as certain anaerobes, staphylococci and gram-negative intestinal bacilli. These successes pave the way for extension of the usefullness of these drugs to the field of prophylaxis. As examples of successes of prophylactic antimicrobial therapy in the field of surgery, colon resection has reached a stage of perfection which frequently permits replacement of staged procedures by a one-stage procedure with end-to-end anastomosis; hemolytic streptococcal septicemia in severely burned patients is now uncommon and skin grafting procedures have become uniformly more successful; surgery of the esophagus and lung has been robbed of potentially lethal infectious complications; and surgery in frankly infected fields is now safer. The desire for safety led many surgeons to rely upon chemotherapy as the first line of defense against impending infection and, as a result, the practice of operating routinely under antibiotic cover soon became so widespread that surgeons felt they would be medico-legally liable if they failed to give patients undergoing surgery a course of prophylactic antibiotic therapy. That this confidence in the antibiotics was misplaced is now apparent. In spite of the availability of more and more new antibiotics, there is a trend to a higher rather than a lower incidence of post-operative septic complications. At times there is an epidemic of these infections in hospitals. Almost without exception the staphylococci and gram negative bacilli cultured from such infected cases are resistant to the very antibiotics (penicillin, streptomycin, the tetracyclines) used to abort them by routine prophylactic therapy. Modern bacteriologic detective work has shown that the current problem evolves from two key factors: (1) replacement of antibiotic sensitive by

antibiotic-resistant strains by widespread use of antibiotics; and (2) saturation of the hospital environment and carriage of and transmission to others of these resistant bacteria by hospital personnel and patients. The solution to this problem evolves about re-education of all hospital personnel as regards the mechanisms and extent and seriousness of the problem of hospital acquired infections, reduction of antibiotic resistant strains by common sense rather than "routine" use of antibiotics and institution of a preventive program designed to curb cross-infection.

Returning now to the common sense indications for prophylactic antibiotic therapy, I wish to make it clear that, whereas antibiotic prophylaxis has been shown, by carefully controlled studies, not to have been generally successful nor indicated in every patient undergoing surgery, it is not to be inferred that such therapy is entirely without value. It is well documented that in extensive open wounds of violence, and in extensive thermal injuries, the prophylactic use of antibiotics is of value against the threat of invasive infection. On the other hand, one must accept the findings that in "clean" operations antibiotic prophylaxis is of no value and is unnecessary, even potentially harmful. In operations in contaminated fields, while there is some doubt whether systemically administered antibiotics can actually prevent the development of wound suppuration, the risk of invasive infection is sufficiently great to warrant the use of these drugs prophylactically to abort or attenuate such infection.

Time does not permit a detailed listing of situations in which prophylactic antimicrobial therapy seems indicated. For those interested we recently published (Surgical Clinics of North America, October 1957) a paper on the possibilities, limitations and hazards of antibiotic prophylaxis in surgery.

Dr. Pines: Would you care to comment on the subject, Dr. Finland? We'd like to ask Dr. Finland to go on from there and give us a brief summary and discussion of under what conditions and in which disease he would use combined therapy.

Dr. Finland: I think that is one of the big problems that has emerged on the scene in the last couple of years. At least it's been talked about a great deal. That's a good thing, I guess, because it focuses attention at least in one area. Theoretically, the combination of antibiotics, (that is, the use of more than one antibiotic) if they are not indentical in their activity, or essentially identical in their activity, should be useful for various reasons. One, obviously: if they have different activity and a different spectrum, you should then broaden the spectrum of activity. Therefore in infections with more than one organism, one might expect that a combination of antibiotics might be better than a single antibiotic, particularly where it is difficult to sift out what might be the individual organism that is the cause.

A second theoretical use of combinations is for the suppression of the development of resistance. The most widely accepted theory of the development of resistance is on a genetic basis; that is, there are certain possibilities for the development of resistance, and if you say one in one hundred million organisms might become resistant in the course of exposure to an antibiotic, then that's ten to the eighth power; then presumable if you have two antibiotics the

chances are ten to the sixteenth power. That means one hundred millionth of one hundred millionth. Therefore you should have great difficulty in getting resistant organisms. This implies that the organisms with which you are dealing are all sensitive to both antibiotics. That's an essential feature. This concept has emerged primarily from the experience with tuberculosis, in which it was demonstrated with streptomycin, which has a rapid rate of emergence of resistance. That resistance could be depressed and delayed by another agent, of which the first was paraminosalicylic acid, and now it is isoniazid. It's interesting that the agent which suppresses the development of resistance to streptomycin is one that is a very weak antituberculous agent, and yet has a better action in delaying and suppressing the development of resistance than does Isoniazid, which is an even more active antituberculous agent than streptomycin.

The third and most recently touted reason was the problem of synergism; that is that some antibiotics in proper combinations might actually enhance the activity of, or might be much more active than either agent alone. In fact, it might be many times more active than either agent alone. That would be a very laudable use of combinations. There is, however, very little evidence for actual synergistic action of antibiotics or antimicrobial agents in actual infections with one major exception, and that is in the case of enterococcus infections. That is really the only organism in which synergism has been found; that is, where marked enhancement of activity of penicillin by streptomycin had been demonstrated in a large proportion of strains, especially from cases of bacterial endocarditis. As a matter of fact, as far as I know, that is the only true synergism that has been proved not only in vitro, but in vivo.

The possibility of antagonism is also raised. Actually, when combinations of antibiotics or antimicrobial agents are tested, if one alters the conditions properly, one can demonstrate synergism, additive effects, antagonism, with almost every combination—only with varying frequency. Antagonism in actual clinical practice has only been demonstrated in one series of cases, and that is in cases of pneumococcal meningitis treated with the combination of Aureomycin and penicillin where in a consecutive series, most of the cases being alternated, the mortality in patients treated with the combination was about twice as high as with either drug alone.

That appeared to be a good demonstration of antagonism, although the combination used in the treatment of pneumococcal pneumonia has not been shown to be antagonistic. The difference is very striking because of the nature and location of the infection; one being accessible to both agents equally, the other being relatively accessible with only a small proportion of the drug getting in to the sight of infection. It is difficult to find other examples. Perhaps other panelists might mention some.

Now in practice, there are only three diseases that I know of in which combined antibiotics have proved really useful. In a recent small symposium that was reported briefly in *Postgraduate Medicine* in the last couple of months, twenty five men whose major interest is in the use of antibiotics and the study of antibiotics, discussed this problem in

great detail. These 3 were the only diseases which any of the group could bring forward where it was proved that the combination is useful and effective.

One, of course, is in the treatment of tuberculosis, and there the combination of streptomycin and PAS, as I mentioned, and now the combination of isoniazid with paraminosalicylic acid, the latter being perhaps the treatment of choice for most cases of tuberculosis except the severe ones; meningitis and miliary tuberculosis. The major reason for its usefulness in tuberculosis is the delay in emergence of resistance, and not the increase in activity against the disease.

The second I've already indicated, is in the treatment of subacute bacterial endocarditis mainly in the disease due to enterococcus. However, a small percentage of cases due to *Streptococcus viridans* also show some synergism, or increased activity beyond what you would expect from the additive effect of the two drugs. Therefore, it has been recommended and is now generally accepted that the combination of penicillin and streptomycin be used for all cases of subacute bacterial endocarditis and not only in cases of enterococcal endocarditis. That's been accepted but actually, cases of subacute bacterial endocarditis, due to *Streptoccus viridans*, can still be effectively treated with penicillin alone, because there has been no increase in resistance of the Streptoccus viridans, and they are all susceptible within the range of reasonable dosage that can be given intramuscularly, and, possibly nowadays, even by mouth.

The third accepted use for combined antibiotics is in the treatment of brucellosis, where one of the tetracyclines plus streptomycin is generally conceded to be superior to treatment with either antibiotic alone.

One of the greatest problems is the fact that because combinations have been useful in these conditions, there has been a tendency of the pharmaceutical industry to perhaps yield to the demand of physicians, and provide them with ready made combinations.

The moderator mentioned the great use of Combiotic. This is a good takeoff point, and I'll tell you an interesting story which will illustrate exactly why the use of *any*, and I underline that, *any* and *every* combination that comes to you in a package may be a vicious distortion of the best use of medicine. I know of no disease in which the combination of penicillin and streptomycin in the proportions in which they come in a package is any real use, and if anybody here can present to me a disease in which that combination is the optimum dosage, I would like to be instructed.

The case in point: I happened to be giving a talk in the University of Milan, and I had a student there who had worked with me. After the lecture she called me over and introduced me to a doctor. She said, "I know you are very busy, but I hope you will talk to this man." He had a problem. He told me the story of his little girl, who is four years old and developed impetigo. He had called his pediatrician, and the pediatrician recommended Combiotic. Being a doctor, and not taking care of his own children, he gave Combiotic. That preparation like most of these combinations contained dihydrostreptomycin, and this is another gripe of mine, because dihydrostreptomycin produces irreversible deafness. This child's impetigo improved and then, just as he was ready to stop the drug, it relapsed, so he in-

creased the dose. He kept on giving it for about six weeks. He didn't want to stop it because the lesion had not cleared.

The doctor, in talking to his child one time, thought that she was not responding, and he was going to strike her because he was not accustomed to having his child disobey. Then he learned that this child was now deaf. This was eighteen months later and the child had not regained any of its hearing. This you would say is very bad treatment, but I can assure you that in wards of hospitals in the United States there are hundreds of patients in whom an order is written on a book for Combiotic, and in which they forget to take it off for four, five, or six weeks. This example was taken because it's the commonest combination used. I would like to know if any of you have any fixed combination in a capsule you think is good and what the evidence for its value.

There are some antibiotics, however, which have a known tendency to produce resistance, mostly in staphylococci, but in some instances in other gram positive organisms, that can be predicted and that is quite regular. These drugs should not be used alone. One of these antibiotics is Streptomycin. That produces resistance in almost all organisms, and in common pyogenic organisms resistance develops rapidly. I don't think anybody should use streptomycin alone. They should combine it with other agents which are also active against the particular bacteria which are causing the infection.

Erythromycin is the second. In our hospital, where we have never used erythromycin alone after our first experience with two cases of bacterial endocarditis who developed resistance in a period of less than a week, we have had no problem of erythromycin-resistant staphylococci within the hospital. However, within six months of the introduction of erythromycin into our community, fourteen percent of strains of staphylococcus, on admission to the hospitals patients who were treated outside, were resistant to erythromycin.

The third is novobiocin, which is the latest of the useful antistaphylococcal antibiotics. In my opinion that drug should never be used alone because it has even a greater tendency than erythromycin to induce resistance. The point is that there are indications, in cases of severe infections in which the staphylococci are not sensitive to erythromycin, penicillin, and the tetracycline drugs, and are only slightly affected by chloramphenicol, in which a combination would be necessary. When you use novobiocin you have to combine it with some other agent. Actually the best agent, in the case of novobiocin happens to be bacitracin, which is a difficult drug to use, but, nevertheless, highly effective.

Dr. Pines: thank you, Dr. Finland. Before we leave this subject you indicated the emergence of the resistant organisms. Would you just give us an idea perhaps of how you feel these organisms emerge? Are they predominately due to cross infection, super-infection, or are they due to overgrowth, primarily?

Dr. Finland: I think most resistant organisms are selected because you use antibiotics, which eliminate sensitive strains. I think that is the major factor in the emergence of resistant organisms. In going over the literature, that certainly is by far the most common cause. The staphylococcus as the best example.

If you start with a highly sensitive non-penicillinase producing staphylococcus as the cause of an infection in a site where super-infection is not likely, such as endocarditis, peritonitis, or osteomyelitis, the rapid development of high degrees of resistance is extremely unusual. The emergence of the development of resistance in the causative organisms is very slow, and you can usually eliminate the infection before the resistance reaches a point where it is not accessible. On the other hand, if you start with a moderately resistant strain it may become more resistant. It has been demonstrated only recently, that the property of producing penicillinase may actually be induced in vivo; but you have to start with a penicillinase producer, which means an organism that is initially sensitive only to a unit or so, and not 0.02 units, which is the original sensitivity of the highly sensitive staphylococcus.

In the case of erythromycin and nobobiocin, resistance does develop in vivo, and there it must have resulted from the exposure; you can say it's still selection, or it's called mutation, whichever you wish . . . most probably it is mutation, and then selection.

Dr. Pines: But don't you think streptomycin resistance is almost always mutation?

Dr. Finland: Yes, because there is a high mutation rate. But, you are also selecting, because you eliminate the sensitive ones and permit those resistant mutants to develop and to become preponderant.

Col. Pulaski: I would like to bring to the attention of audience relative to streptomycin the fact that in twenty-four hours one culture plate transfer, you can get out a certain number of colonies that won't grow again unless you provide streptomycin, because they need streptomycin as a growth factor. I think that shows that the mutation will take place with certain organisms when exposed to streptomycin.

Dr. Finland: The problem of resistance is not only the development of resistance in the original organism, but the elimination of species that are sensitive. So that now, our hospital for example, has a large number of patients with pseudomonas infections of the urinary tract, or infections with organisms that we never heard of before. Achromobacters and proteus have become important organisms in the urinary tract infections.

Dr. Pines: Col. Pulaski, do you think that in wounds the factor of resistant organisms is predominately due to overgrowth, or is cross infection a major factor?

Col. Pulaski: In answer to this question it is worthwhile to review some of the historical aspects of this problem. It is well known that, unless traumatic wounds are soiled with materials like dirt, feces or foreign bodies, they contain surpisingly few viable bacteria. If the wound becomes infected, the infection is usually due to staphylococci, hemolytic streptococci, coliform bacilli or combinations of these bacteria and staphylococci predominate. In a classical study in 1945 by Williams and Miles of London small industrial wounds cultured shortly after the accident showed an incidence of staphylococcus aureus of only 20%. The more often a wound was exposed for inspection or teatment, the higher was the incidence of positive staphylococcal cultures and of established infection. Williams and Miles believed that these staphylococci, in the

main, were added by cross infection after wounding. They showed further that improvements in dressing routines led to a reduction in incidence of clinical infections. Since the advent of bacteriophage grouping and typing of staphylococci as an epidemiologic tool, the evidence is overwhelming that the majority of staphylococcal infections in wounds are due to cross-infection of wounds—not overgrowth of bacteria implanted by the instrument of wounding. Our own experience with the burn problem supports this.

Dr. Pines: Dr. Schreck, do you have any contributions on this phase of the subject?

Dr. Schreck: I don't think so.

Dr. Pines: Would you want to say a word in reference to the development of resistance? Is the development of resistance really limited by the use of combined antibiotic therapy, or is that a statement that's made without any basis in fact?

Dr. Schreck: I think, indeed, the development of resistance is decreased by the use of combined antibiotic therapy. Perhaps only in one instance would I subscribe to it, and that would be in Tuberculosis, as Dr. Finland brought out. I think, theoretically it's on very good grounds, and I think that the practice has stood up. Whether or not I would take this over into other fields, with other bacteria, I'm not so sure at this time.

I might add one other thing. I wonder if Dr. Finland would agree that one other reason for using combined therapy would be to decrease the toxic manifestations of an antibiotic. Of course, the example of this is the use of streptomycin on the drawn out program in combination with paraminosalicylic acid as it was originally introduced, or isoniazid.

Dr. Finland: I'm glad you brought it up because it is usually said that if you use combinations of antibiotics you use less of each, and therefore decrease the toxicity. Actually, if you use more than one antibiotic, you're not giving your patient proper treatment unless you use full doses of each; and therefore you have doubled the toxicity. As far as paraminosalicylic acid and streptomycin is concerned, there one has a specific example where it was found that the use of PAS permitted the use of small doses of streptomycin. That was demonstrated, but there is no other situation in which that had been demonstrated.

Dr. Schreck: That's the only instance I cited; I'll have to agree with that.

Dr. Finland: Yes, and that is true. Actually, because it is the only instance, I think it is very important to very sharply localize it. I mentioned one other disease, brucellosis, where the combination of streptomycin with the tetracycline drugs has been thought to, and it actually does, reduce the period of treatment which is necessary. But it has recently been shown that, with the use of a full dose of one agent alone, and prolonging the period from two weeks to six weeks, you get actually fewer recrudesences than with two weeks of treatment with the combination.

Dr. Long: On the other hand, that's nothing new. If you look back, when we used Aureomycin to Dr. Schoenbach's paper, we only treated patients with undulant fever for two weeks. We gave them large doses. When I had undulant fever, I took six grams a day for seven days, and then I took three grams a day for the next week. It wasn't pleasant to do, but. . . .

Dr. Finland: You were a hero!

Dr. Long: No, but that's the way you cure yourself of undulant fever, that is when you have acute undulant fever. Dr. Schoenbach and I never had a relapse in any of our patients, all of whom, with the exception of myself, and I happened to be at Martha's Vineyard, had positive blood cultures. We had not relapses when using that heavy short period dosage, but it was very unpleasant to take that amount of Aureomycin.

Dr. Pines: Dr. Long, would you tell us something about the incidence and the significance of reactions to antibiotics.

Dr. Long: I'd just like to point out that recently the Food and Drug Administration surveyed one-third of the general hospital beds in this country to determine the incidence of toxic reactions. This covered a period of three years. Now to be very brief about the results of this survey, I will tell you that the dangerous drug is penicillin. It has produced and will continue to produce a certain number deaths. It produces some very serious reactions that do not end in death. It produces some relatively modern, or mild reactions that are very unpleasant to have. Of course, we don't know what Aristocort® is going to do, but as a result of using the other corticoids, I have sometimes thought that the cure of the reaction produced by penicillin by use of corticoids was worse than the reaction from the penicillin.

I can remember one doctor, an acquaintance of mine, who foolishly took penicillin every time he got a cold, and who finally, one fine day, took it and broke out with hives and developed enlarged nodes, and an arthritis. He had to take cortisone in order to get rid of the itch and the pain in his joints. Two weeks later he had a brisk hemorrhage from a very fresh, duodenal ulcer. That doctor was laid up for a matter of six months just because he took Penicillin when he had a cold. He knew of course, that it does absolutely no good in respiratory tract infections due to viruses.

The interesting thing is, when you leave penicillin and go to the tetracyclines; *of* you will agree that super-infection with other bacteria (which in my experience has been vary rare), or fungi is not a toxic reaction, which it is not, then there are practically no toxic reactions from any of the tetracyclines. The same is true of certain of the other broad spectrum antibiotics. Novobiocin, in our hands, and I'm sure, in yours Max, and I think in yours Ed., produced about ten percent skin reactions in the first series of patients which we treated. It was a bit fantastic to see the number of skin reactions it had produced right off the reel. Bacitracin and polymyxin B, which are antibiotics limited to parenteral use except when you're trying to clear organisms out of the intestinal tract . . . as well as neomycin . . . have their own special toxicities. One can get some very curious peripheral neurological manifestations with polymyxin B. They clear up when you stop. You can get renal injury with polymyxin B, neomycin, or bacitracin. Those things you have to watch for. However if you follow the direction in the package inserts carefully, you won't get into much trouble.

I would like to reiterate in this very brief report on toxic reactions that it is penicillin which is causing the most trouble. And I might as well cite from the paper of the medical examiner who is with us . . . some of you may even

know whom I'm talking about . . . but there was a dentist who worked across from a doctor. Every time the dentist got a cold he rushed into his doctor friend and got an injection of penicillin. One time he got an awful skin reaction from an injection of penicillin. The next time he got a cold, he ran right across the hall and had another injection of penicillin which his doctor friend willingly gave him. Within a minute the doctor had a dead dentist on his hands.

From the Borough of Brooklyn, within the last few years, it has been reported through the medical examiners that there have been at least a dozen cases that the medical examiners office had picked up . . . deaths from anaphylactic reactions to penicillin. The way I look at this, we're killing too many people with drugs. Far different from when we were interns. There were not too many toxic compounds then. But almost all of these newer chemicals have certain side reactions. They may kill people, they may injure them. This happens too frequently. As far as I'm concerned, you're not going to get me to take any of those things until I need them. I thought, until I came to Brooklyn, that there were only two drugs in the pharmacopea that I knew all their toxic reactions and trusted. That was aspirin and whiskey. And since I've been at the King's County Hospital, I'm worried about aspirin, because we have too many instances of hematemesis in people who are taking aspirin. So, if I were you, I wouldn't take any aspirins unless you absolutely have to. I wouldn't.

Dr. Pines: Dr. Long, would you say something about the toxic reactions in chloramphenicol?

Dr. Long: I neglected to say anything about the toxic reactions of chloramphenicol. That was a very interesting episode. In the original work done in dogs, it was shown that chloramphenicol, which has in the chemical structure a nitro group in the para position, affected the blood. That was published very early. Any one who was interested in reading about it could do so. About a couple of years after chloramphenicol got into wide use, we began to hear that various types of blood disturbances were arising. Finally, the National Research Council set up a Committee, and reports were submitted to it from all over the country on these reactions. Somewhere between twenty and thirty deaths were adjudged to be due to blood dyscrasias which occurred in association with medication with chloramphenicol. Interestingly enough, a number of those fatalities were in doctor's families; doctor's children, doctor's wives. This investigation resulted in about an almost total lack of use of chloramphenicol in this country for about two years. Then it began to be used again. Now, I would judge, that it's back almost to the usage, or more, than it had prior to this episode.

It is the impression of people who have been interested in this subject that those individuals who get long continued or frequently repeated courses of chloramphenicol appear to be more liable to have a blood dyscrasia than those who received a short, quick course for the cure of a disease. I have no hesitancy in using it. I realize that blood dyscrasias are still occurring in some people, but fatal reactions are very, very rare. We use it now selectively in the Kings County Hospital in our medical service, because it's a very good drug, and we don't worry too much

about it because we use it only when it will be curative.

Dr. Pines: Dr. Finland.

Dr. Finland: There's no doubt that penicillin from the very early days was shown to be a very markedly sensitizing drug. There is always the possibility that this may be the cause of cases of disseminated lupus and collagen diseases, because, as you know, the phenomenum has been demonstrated transiently in some and persistently in a rare case for the first time during a severe penicillin reaction of the serum sickness type. We also know the possibilities are there since Arnold Rich's work on the demonstration of the relationship of sulfonamides, and sulfonamide reactions to polyarteritis, that this is a distinct possibility because serum sickness, polyarteritis, the collagen diseases, are perhaps in some way related. This is a problem with all drugs. No doubt also, the major reason we have so many deaths from penicillin is because that is the most widely used drug. I don't know how many people, but I think it's estimated that less than five percent of the population in this country have failed to get it. It's only people like Dr. Long and myself, who don't take it, unless we really have to and we're lucky if we haven't had to take it. In most cases there are situations where it is necessary, and certainly Dr. Long would want his child, or his grandchild to take penicillin if he had a hemolytic streptococcal infection, because it's still the best drug to use in such infections.

Dr. Long: No, not necessarily.

Dr. Finland: You wouldn't. Well you see, this is where the fireworks begin.

Dr. Long: I would give them sulfadiazene or a tetracycline.

Dr. Finland: There's good reason to give penicillin because you can get rid of the streptococcus; you could reduce the chances of rheumatic fever much more effectively. However, this is the fact: When you read the literature about reactions, and I think this is the point Dr. Long wanted to make, you find that in proportion to the good you get out of antibiotics and the number of people you save, reactions are not really very important. And because penicillin is used for useless reasons such as common colds, you get deaths when you really shouldn't have them, and these are preventable deaths. If you're treating staphylococcal infections with, say staphylococcal bacteremia where even nowdays the chances of recovery in even the best hospitals is only about fifty or sixty percent, and if you have one death in forty thousands from aplastic anemia direct chloramphenicol; if this is the best figure, you certainly take that risk. You almost take the risk in crossing the street when there's a lot of traffic.

Dr. Pines: Dr. Schreck, do you want to say something?

Dr. Schreck: Yes. We have always been intrigued by the individual who has his penicillin reaction apparently on the first contact with the antibiotic. Some of these patients have been nurses who have worked on wards where penicillin had been administered by aerosol. I think we can assume that such a nurse has actually had contact with penicillin and that the contact occurred via the mucosa of the respiratory tract. So remove these people, several of whom have had severe reactions even when skin tested with penicillin, and we are left with a group of individuals who do have a reaction on first contact with penicillin.

We have assumed for some time that these individuals probably have had a prior superficial mycotic infection of such areas as the feet or the groin. Perhaps some of you have seen the report that came out of Hungary this past summer in which it is claimed that hairs from individuals with mycotic infections (epidermophyton or trichophyton) do bear fungi which elaborate an antibiotic, presumably penicillin. The authors implanted some of these infected hairs on nutrient agar plates which were inoculated with a penicillin susceptible organisms. Following incubation, the hairs were surrounded by areas of no growth; such antibacterial action was prevented by the addition of penicillinase making it appear, therefore, that the substance produced by the fungi on the hair was penicillin. This is the best evidence I know of indicate that these fungi, growing normally in mycotic infections may possibly elaborate penicillin and so sensitize the patient.

Dr. Long: Another interesting factor about penicillin sensitization that none of us knows anything about that we wish we knew . . . the chances are tonight that between five and ten percent of the milk in the presently open delicatessens in Brooklyn has penicilliin in it. Somewhere between five and ten percent of all samples of milk have penicillin in them for the reason that while you can't buy penicillin over the counter, anyone can go into any feed store and buy quantities of penicillin in a little tube to be used in the treating of mastitis of cows. Now, when a farmer's cow gets mastitis, he's got to get that quarter of the udder fixed up rapidly, because he can't sell his milk. It looks bad . . . it's blue and it's kind of stringy, and it's got too many pus cells in it. So he hurriedly gets a tube of penicillin and squirts it up the teat of the infected quarter. Then, in twenty-four hours or so, the cow's milk looks better, and the farmer can pour it into the can and sell it to the dairy. It takes three to four days for the Penicillin to be completely excreted from the particular quarter of the cow, so the cow is excreting penicillin in her milk for that number of days.

I must tell the story about the anesthetist whom Dr. Finland knows; we met him together. The anesthetist had become quite sensitive to penicillin, and had gone through a long period of desensitization, so that finally he could go back and work in the operating room, if no one used any penicillin in it. He really had to be careful, however. He was coming from the Middle West where he was working in a hospital, to Philadelphia to visit his family. On the toll road in Pennsylvania he stopped to have a bite to eat. He ordered a piece of apple pie and a carton of milk. He poured the milk into a glass, took one swallow, and almost died of an anaphylactic reaction. We don't know how often this happens, and we don't know whether getting two units of penicillin four days a week, or eight hundred units of penicillin (which you can sometimes find in a glass of milk) one day a week, and repeating this fifty two weeks a year . . . we don't know whether that is sensitizing our population to penicillin.

The Food and Drug Administration is trying to work out a dye to color the penicillin ointment farmers inject into the infected quarter of the cow, which will take two days longer to come out than it takes to excrete the penicillin. Then the milk can't be sold because the milk will be blue, or red . . . or something like that.

Dr. Pines: Dr. Schreck, you have in conjunction with Dr. Caswell, done extensive work on the problem of hospital infections. I wonder whether you can, in just a few minutes, summarize your findings for us?

Dr. Schreck: Before we go into our findings, I think we should be aware, as has been alluded to by the panel so far, that we are seeing infections with some increased frequency in *many* hospitals throughout this nation. Among these infections are wound infections and urinary tract infections with pseudomonas, proteus, bacteriodes, and other organisms. Some of these represent an organism peculiar to a given hospital. One institution in Philadelphia has been particularly plagued, for the past two years, with pseudomonas infections in post-operative patients. These represent hospital acquired, or institution acquired, infections. Proteus infections may not necessarily be; bacteriodes infections may not necessarily be. These latter two may be endogenus infections acquired from the patient himself.

I think that we can all agree that the major problem in this nation, if not the world, is seen with the Staphylococcus aureus. We at Temple University Hospital became aware that we had a situation along this line in February of 1956 and have been studying the situation since them. The first year's experience is now published in the January 1958 issue of Surg. Gyn. & Obst. I shall consider a few points from that report at this time.

When one realizes that a staphylococcus infection situation does exist in his hospital, I think that he has to try to identify the organism as specifically as he can. In other words, he can not just sit back and tabulate all of the staphylococcal infections occurring. It is rather meanlingless for one to say, "We have had one hundred staphylococcal infections," even if the term coagulase positive is appended. We have done coagulase tests on all of our organisms but the surgeon or the internist does not have to have a coagulase report appended to the staphylococcus if he knows it comes from an abscess or from a wound infection because its pathogenicity has already been demonstrated. We feel that we must put a tag on the organism, and the best way we can possibly tag the staphylococcus today is not by a serologic test, but rather by bacteriophage typing.

I project this slide merely as an illustration to show what bacteriophage typing really looks like. What we actually do is isolate the organism in pure culture from the patient. Then using a large swab dipped in a broth culture of the organism, we inoculate the entire surface of an agar plate. As soon as the inoculum dries we place a drop of twenty-five different bacteriophages in the appropriate square on the plate. That means that in the square 3A we have placed one drop of bacteriophage 3 A. The next square has a drop of phage 3B placed in it. This is repeated for the remaining twenty-five bacteriophages. After incubating over night we then find that if the bacteriophage has lysed this organism there is a clear zone of no growth. The plate projected on the screen shows a zone of no growth around 42B, around 52, and around 81. With this pattern of lysis we then name the organism 42B/52/81. I think we can have the lights now, please.

The strain, 42B/52/81, was recognized very early in our study to be the major staphylococcus of importance in

our institution. This organism has been present, so far as we can determine, only for about three years. At which time is was apparently first described in Columbus by Shaffer and Baldwin. Baldwin has a few bacteriophages different from ours, so his pattern is a bit longer than ours.

The next thing we did with this organism was to determine its antibiotic profile. This slide shows that we have tested a number of these strains isolated from the patient. Actually, for each antibiotic we have three different zones, or three different lines. The top line for each antibiotic represents this phage type 42B/52/81. You can see that this strain of Staphylococcus aureus was the most highly resistant that we were dealing with. It was resistant to ten units or micrograms per cc. of penicillin streptomycin, tetracycline, and, of course, polymyxin as we would assume it to be. About fifty percent of the strains were resistant to magnamycin and the organism was resistant to erythromycin. In Shaffer's and Baldwin's hands this strain had been susceptible to erythromycin, and they cleared up their situation with erythromycin. We did not have that advantage. This chart also shows that the organism was susceptible to chloramphenicol, novobiocin, the two parenterally administered antibiotics and neomycin and bacitracin, two antibiotics which we used to some degree, topically, with some limited success. While we consider this organism to be a resistant organism, one must always inquire, "resistant to what?," and this chart tells us to what.

May I have the next slide please? This actually shows our incidence of infection with this organism, and also other types of staph. aureus, but I'll talk only about type 42B/52/81. During the one year period that has been reported, we had a total of three hundred and twenty-three patients with hospital acquired staphylococcal infections. These were broken down into one hundred and thirty-six clean surgical cases that became infected post operative wounds. About fifty percent of these post-operative wound infections were caused by this strain 42B/42/81 which I will now call an "epidemic strain." We had a number of minor surgical infections; twenty-eight. Again fifty percent of these were caused by this type 42B/52/81. We had eight post operative staphylococcal pneumonias. Five of the eight were caused by this strain. Since then we have had quite a few pneumonias in the past few months, with some very dire results. We had a number of individuals who were admitted to the hospital *with* staphylococcal infections. We were surprised to find that sixteen percent of these people were already infected with this organism before admission. While this chart points out that this organism is quite well entrenched within the hospital, we were most surprised to find that it also exists outside the confines of the hospital. This slide does not reveal that we had a number of postpartum breast abscesses, eighty percent of which were caused by this organism; and a number of newborn infants infections, eighty percent again caused by this type 42B/52/81. This strain then, has accounted for a number of infections throughout the hospital on all services. Many reports have been concerned only with newborn infections or with postpartum breast abcesses. We were confronted with a total hospital infection situation.

Is there another slide? This shows

the percentage frequency distribution of our three hundred and twenty-three infections by month. When the study got underway in February we were running about thirty-two infections, and in March we jumped up to the highest peak we had. The peak fell down in April and has fluctuated a little bit since then. The figures extended beyond this year show that we had a slight rise in April of 1957, but nothing to the extent that it was initially. I might point out that at the beginning of this study we assumed, as others had done before us, that it is the nasal carrier who is important in disseminating this organism. We therefore surveyed six hundred and forty of our personnel by nasal cultures, and found that only eleven out of six hundred and forty were carrying this organism 42B/52/81. That's a very small percentage to account for this number of infections. On the other hand, during the course of the year's study, we had at least ninety-nine of our personnel with infections. Actually, they had one hundred and thirty-seven total staphylococcal infections. These are personnel working on the wards or any other place throughout the hospital with infections 65% of which were on the hands, the upper extremity, or the face. So here are active infections which we think, in our personnel, have been more responsible for disseminating the organism to patients than are the healthy nasal carriers. There is much more that could be said about this; the type of lesions seen, the severity of the lesions, how long they persist. I think I'll let this matter go until the question session.

Dr. Pines: Col. Pulaski, would you want to say a word on possible infections?

Col. Pulaski: The last bar graph projected by Dr. Schreck is very significant. To me, it suggests that once hospital staffs become aware of, and intensely interested in, the problem of hospital acquired infections, breaches in aseptic technique become more readily apparent and steps are taken promptly to correct them. In consequence the incidence of infectious complications drops significantly. It is only when new, untrained personnel are added to the hospital staff that the incidence of infections again ascends. This emphasizes the necessity for a continuing program of education of personnel as to the channels of cross-infection as well as the practical routines which must be rigidly enforced to minimize the incidence of acquired antibiotic-resistant infections.

Dr. Pines: We have many questions from the audience. It would probably take us six months to have them all answered, but I think we can start with a few. I'll direct the first question again to Col. Pulaski. Which method of sterilizing the gastro-intestinal tract do you prefer, preoperatively?

Col. Pulaski: In order to answer this question I must emphasize first, three basic facts: (1) there is no single drug or combination of drugs that is capable of completely sterilizing the gastrointestinal tract; (2) the single most effective agent is neomycin; and (3) the efficacy of neomycin or for that matter, any other intra-enteric antimicrobial agent is related to the quality and completeness of mechanical cleansing of the bowel. Mechanical cleansing has as its objective removal of the solid stool from the intestine, thus eliminating a great proportion of the total quantity of bacteria in the bowel. This results in a mechanically clean intestine upon which

the operation will be easier technically and safer. The antimicrobial agents such as sulfasuxidine or neomycin are adjuncts to mechanical cleansing. These drugs eliminate most of the pathogens which remain in the intestine following the cleansing process. Neomycin is the drug of choice for rapid preparation—36 hours of therapy is ordinarily sufficient. Sulfasuxidine or sulfathalidine are adequate if preparation is extended over a period of 5 to 7 days. There are a number of factors that limit the effectiveness of preparation of the bowel. Included are such circumstances as insufficient drug administration because of improper dosage; failure on the part of the patient to actually take the pills, or to vomit them after ingestion; inadequate mechanical cleansing; or the ingestion of milk, which, as you know, has a high bacterial count, and which is a high residue food. If abscess, fistula or sinus tracts are present such channels will not be reached and "sterilized" by drugs and one can expect a poorer quality preparation. The presence of a proximal colostomy will divert drugs from the distal loop and require additional cleansing of that portion of the bowel. Finally, if complete obstruction is present, it is obvious that orally administered drugs are ineffective for preparation of the bowel.

Dr. Pines: Would you concur with Dr. Deering of the Mayo Clinic in the statement that penicillin and streptomycin administered parenterally are equally effective in the preparation of the gastro-intestinal tract?

Col. Pulaski: The statement made by Dr. Deering requires amplification. I believe he said that, at the Mayo Clinic, one of the methods of preparation of the bowel is the use of penicillin and streptomycin parenterally before and following operation and that in these patients oral antibiotics are not administered to the patient. Deering also stated that each of these patients is subjected to thorough preparation of the bowel by minimal residue diet, saline catharsis as well as enemas beginning two days before operation. In this series of patients he observed no single case of micrococcic enteritis or pseudomembranous enterocolitis. Dr. Deering told me privately that his analysis was not yet complete at the time of this statement and that he had no data as to the incidence of other post-operative infectious complications with this regimen as compared with that in which oral administration of antibiotics was used as an adjunct to mechanical cleansing. In studies on normal subjects several years ago we found that thorough mechanical cleansing of the bowel could effect over 90% reduction in the bacterial count of liquid stool. Antimicrobial therapy increases the reduction of bacterial count to 99%.

Dr. Pines: The next question is addressed to Dr. Long. What is your reaction to the present prolonged use of penicillin in the prophylaxis of streptococcal infections, especially rheumatic fever?

Dr. Long: Two years ago at Rochester, New York I said I did not approve of the flat recommendations of the subcommittee on Rheumatic Fever of the American Heart Association, and I do not agree with them today. I don't believe they are completely sound in relation to the natural history of rheumatic infections; namely one facet of it, that the older you are, and the farther you are away from your last attack of acute rheumatic fever, the less chance you have of another attack. I

believe that in any one who is in the susceptible age group . . . which is childhood . . . who has a rheumatic infection, that they should have prophylaxis with, I think, benzathene penicillin parenterally once a month. Also, I would use this procedure in individuals who are at the age of puberty or let us say under twenty-one, who have had rheumatic infection, and who have a rheumatic heart lesion. For a number of years, and I'm not in the position to say at this moment how many years is, because I'd have to define my patient in a little better terms than I have done he should have penicillin prophylaxis. However, I feel that in instances in which there is no demonstrable cardiac involvement, that sometime around twenty-five or thirty years of age . . . and I'd like to have the patient's adenoids and tonsils removed, in order to lessen his chance of getting a streptococcal throat infection. . . . I might say that I didn't think that was not needed anymore. I have a dim outlook on having to turn up your rear end once a month to some eager beaver who wants to sink a needle two inches in it in order to get the penicillin intramuscular . . . for the rest of your life. I think there comes a time in patient's life when her chances of getting rheumatic fever are almost nil. I don't know what this widespread use of penicillin prophylactically is going to amount to in relation to toxic reaction, because there isn't much published on that as yet. Our own experience at the Kings County Hospital, so far in the rheumatic fever clinic is concerned, does not lead us to believe that we've seen very much in the way of toxic reactions in these children and younger adults so far. I don't know whether anyone here agrees with me.

Dr. Pines: Dr. Finland, would you like to comment?

Dr. Finland: I, too, have had considerable difficulty in getting around to the idea of subscribing to the lifetime prophylaxic use of penicillin, which is what is implied and actually stated in the recent work of my very esteemed friend, who has really done some very pioneer and very important work on this prophylaxis. There's no doubt that you can extrapolate from their data and say that if you want to prevent the very last case of rheumatic fever you might to be able to do it, but I wonder whether we want to prevent the last case of rheumatic fever by making some of the people very sick, in addition to having them eat off the mantlepiece for a few days every month. This is another aspect of this prophylaxis that hasn't been emphasized so much. I think it's very important, however, to realize that the best prophylaxis of rheumatic fever is the early and proper treatment of streptococcal infections, and that's where I must take issue with my friend Perry, because there I do make a difference between the use of penicillin in a non-sensitive individual and the use of sulfanomides.

Dr. Long: You asked me for myself though. The way you phrased your question . . . what would I do, and I know what I'd do.

Dr. Finland: Still, I think we ask our doctors and our patients to do what we tell them, not what we do. I'm one of those doctors who tells people what to do.

Dr. Pines: Dr. Finland, what has been your experience in the correlation between the in vitro disc or tube sensitivity test in clinical response?

Dr. Finland: I think that involves a

lot of work to carry this to a point where you can draw conclusions, because if you do the disc sensitivity or do any type of sensitivity on any organism that you get from any disease and try to correlate it, the correlation becomes poorer and poorer. The more organisms you test and the less relationship they have to disease. But it's obvious, for example, in streptococcal infection . . . it doesn't matter whether you use a disc or a tube . . . everything correlates perfectly. In pneumococcal pneumonia everything correlates perfectly. It's when you get to borderline cases where the disc that's been kept poorly, or that happened to be poorly worked out, or one of the sports in a tube may give aberrant results.

We have found in taking out a fresh bottle of discs and putting them all on plates that are uniformly seeded with the same culture all the way from no zone and a large zone with the same sensitive strain. This can happen. I think the manufacturers are very anxious to avoid this. They do a lot of things to test and to try to eliminate it, but it's still difficult because they can't eliminate what happens after it leaves their factory. On the whole, there's no doubt that a tube sensitivity test will check with a plate disc sensitivity test where you know the antibiotic and you have a control, or if you control your discs frequently against known sensitive strains—When you do that and you're dealing with infections that you can be sure are due to the organism that you are testing, the correlation is very good. In proportion to the difficulty in establishing the relationship of the organism to the infection, the correlation decreases.

Dr. Pines: Wouldn't you agree with that?

Dr. Pulaski: Definitely.

Dr. Long: I think you have to watch your disc in the laboratory. I know of one batch of discs that went bad. About half of them were used up before they spotted them. My way of checking on this is; every time I see something that doesn't seem to me to make sense, I go back to the laboratory and say, "let's get a check on those discs," . . . because they can go off. The technician doesn't realize how these discs can go off and when they go off it upsets your whole applecart in trying to judge therapy by using sensitivity tests from the laboratory. Another thing about laboratories, and please don't forget; depending upon the area in which you are in, there is between a 0.5 to 2.0 percent error in the transcription of the report which is sent to the ward to the doctor. That goes up and down during the day, depending upon the time of the day the reports are made out. When your transcriber is tired late in the afternoon, the error goes up.

Dr. Schreck: I would like to mention just one point about the correlation of the disc with the test tube susceptibility test. In our department, much work has been devoted to this end, and there can be some pretty good correlation with most antibiotics and most organisms. The exception, however, is the Staphylococcus aureus and because of this, in the past two years, I would not at all accept the filter paper disc antibiotic test for the purposes of publication. I was much too discouraged at having one strain of staphylococcus reported as susceptible to the disc test one day and resistant the next day or vice versa. The thing accounting for this

difference in susceptibility on retesting was the fact that the number of organisms implanted on the plate differed from day to day. For reproducible results the inoculum size must be held constant as well as the concentration of antibiotic. So I employed the most standard conditions that I could possibly get for antibiotic susceptibility testing, namely, the test tube dilution method. In this technic, we used 0.5cc. of a 1:1000 dilution of an overnight broth culture added to 0.5cc. of the dilution of the antibiotic to be tested.

Dr. Long: Don't you think that in most instances, if you use your head and watch your patient's chart, you'll tell whether your antibiotic is working by the time you get the report back from the laboratory?

Dr. Schreck: Exactly and that leads to another comment I would like to make. A great deal of importance is attached to the laboratory results concerning antibiotic susceptibility, at least at our institution. This seems to be accepted by the physician as an infallible report. The physician so often appears not to realize that this report may be questioned just as well as any report from any other clinical laboratory. We will be the first to admit that our reports may be in error.

Dr. Finland: I'd like to tell a story of a patient who was sent to me. I really didn't think they should send the patient (a doctor) all the way from Pittsburgh to see me. Because he had a urinary tract infection, I thought a good urologist and a good laboratory ought to be able to solve the problem of whether they were using the right antibiotic. The urologist insisted, and I think it's very fortunate that he did, because here was the story: The patient had had urgency and frequency, and the technician in the laboratory that examined his urine reported that she saw a few white cells. She cultured it, and reported the organisms, and the sensitivity of the various organisms. Since all of the organisms happened to be sensitive to antibiotics A and B, he took A. He took it for a while, got better, and then he began to have recurring symptoms. His urologist went through all the routine of putting ureteral catheters up and trying to find out where this was coming from, and couldn't find anything. Again he took antibiotic A, and it did good. He kept on taking this for awhile and felt better. Then he began to have symptoms again, and again he sent his urine to the laboratory. The technician again reported finding organisms, and did a sensitivity. It wasn't sensitive to A, it was sensitive to B. This thing went on for a period of two years. This may sound just as foolish as this other case, but it is a true case . . . this is not for effect. This doctor had been taking antibiotics and I figured that he spent approximately four thousand dollars for antibiotics over a period of two years. He brought with him all of the laboratory reports. There was never a report in which they said "pure culture," often it was only a single colony. There was never a report in which they said "pus" . . . only "occasional white blood cells." This man, I'm sure, never had a urinary tract infection. I think he had local irritation, but didn't realize it; and was just taking these antibiotics because he was having these local symptoms and because the laboratory reported finding some organism. This is the way I'm sure that many doctors practice antibiotic therapy, too. I think this brings

out in a very striking way how important it is to know how to use a laboratory.

Dr. Schreck: May I make one more comment along that line? It seems to be the vogue today to impregnate a disc or prepare a tablet of substances other than antibiotics and sell them so that the bacteriological laboratory can report on the susceptibility to such things. Furadantin® and Mandelamine® are two such products I have in mind. These things are perfectly all right to be employed in the laboratory, *provided* the clinician understands the mode of action of these drugs. Does he recall that Mandelamine® is broken down in the urine and that these resulting substances are the active agents which make the drug useful only in urinary tract infections. And does the physician realize that Furadantin® is a drug for urinary tract infections when administered orally? I have heard of instances where reports of susceptibility to such agents as these have gone to the ward where they have been responsible for the administration of the drug to treat *systemic* infections with obviously tragic results. So disc testing must be employed with cautious, thoughtful diligence.

Dr. Long: One doctor recently asked our laboratory why we didn't have a test with Varidase®; it was such a good antibiotic.

Dr. Pines: I think we have time for one more question. This is an open question to the panel. How would you treat persistent disabling diarrhea, following the use of antibiotics?

Dr. Long: I'll speak to that first, because once upon a time I took Tetracycline when I thought I had laryngitis. (I learned later I had polyps.) I got diarrhea, and began treating myself, as all good doctors do. After two weeks I wasn't much better, so I began to go and see doctors. Before another two weeks passed I saw a dermatologist. To make a long story short, nine months later at the Academy of Medicine at Niagara Falls, I still was in trouble. At a reception after the meeting I ran into Dr. Curly from Ann Arbor. I told him my troubles. He said, "put your cocktail down and let's go out and take a quick look at you." He said, "stop taking all that medicine, you will be all right in a week," and I was. He said I had a beautiful overtreatment dermatosis. I tend to think that with these diarrhea's after stopping the antibiotic that the less you do about them the better.

Dr. Pines: Dr. Finland.

Dr. Finland: I think we were the first to describe a large series of cases of staphylococcal diarrhea while we were testing Terramycin. We found that the best treatment was to stop the drug, because invariably, if you do that the flora returns and the staphylococci clear. Others used erythromycin because it was a new drug and the organisms were still susceptible. They got good results, but I think the major result was due to the fact that they stopped using the Terramycin. I think that it still true. Of course, if they have severe diarrhea you have to treat the effects of that diarrhea, by replacing fluids and electrolyte just as you would the diarrhea of an infant, or as you treat cholera. The major problem in preventing this, and keeping it from going on to a fatal outcome, is to stop that particular drug.

Dr. Pines: Are there any other suggestions? Dr. Schreck.

Dr. Schreck: I've seen only one instance in which there was a true staphyloccal diarrhea, and this appeared as a cholera-like stool. This was in a young girl who did clear up the diarrhea when the antibiotic was stopped. She received no further medication. Whenever the situation is brought up, I always recall one case in an adult, however, who was having recurrent diarrhea over a period of almost a year . . . on and off antibiotics, paracolon periodically isolated from his stool. Either the antibiotics or the paracolon organism might have possibly been considered the responsible agent for the diarrhea. But extensive study by the attending physician revealed that the patient had achlorhydria without pernicious anemia and without carcinoma of the stomach. So here was a plain achlorhydria responsible for apparently nothing but recurrent diarrhea. When treated with hydrochloric acid, the patient was free of diarrhea.

Col. Pulaski: I go along with the comments and suggestions stated by Dr. Finland . . . if the diarrhea is due to a specific pathogen, the treatment is specific antimicrobial therapy; if the diarrhea is non-specific the only treatment is non-specific and supportive.

Dr. Pines: Dr. Rosenthal, who was referred to by Dr. Long, is in the medical examiners office in the handling of some of the penicillin deaths. Dr. Rosenthal requested a moment to discuss that.

Dr. Long: You reported eight cases, didn't you?

Dr. Rosenthal: That was in 1954. I'm sorry to say that I'm about to report on thirty. These come from the entire city area, and amazingly enough, I'm going to be brief . . . about two minutes is all . . . and say that practically none of these have occurred in hospitals in surgical cases where there's a good deal of penicilin being used. Just why, I don't know, but without violating confidences, I think that over half of these cases may be stricken off as wholly unnecessary; one to the point of being given for a sprained toe where autopsy was performed. To try to justify this, perhaps because of its strong medico-legal implications, the area was dissected; the tissue was found to be perfectly normal.

Every effort has been made to autopsy these cases, and we have autopsied almost every one of them to try to see whether, even in autopsy, we could justify the use of drugs. I'm sorry, again, to say that it hasn't been justified in most instances. We're not going to try to say that, when we are called upon in the next group of cases, that we should stop the use of penicillin. Because if it were not for penicillin, quite a number of us probably would not be here in this room tonight. It's a great drug and one of the great discoveries of the century; there's no doubt about it. Let me call an end to this report and try to reply as we did once before as we ask for the discriminate use of a wonderful medication.

Dr. Schreck: Dr. Pines . . .

Dr. Pines: Yes, Dr. Schreck.

Dr. Schreck: I should like to comment along Dr. Rosenthal's statement and along Col. Pulaski's opening statement in which he mentioned that in the early days of antibiotics, one might have been medico-legally responsible if he did not give prophylactic antibiotics. I am convinced, as I am sure the panel is, that prophylactic antibiotics should not be administered in either the pre-

or the post-operative period. The two exceptions which come to mind would be the patient being prepared for gastrointestinal surgery or . . . for resection of his tuberculosis lesion.

Our committee on infections some time ago advised against the prophylactic use of antibiotics for routine surgery, yet one of our surgical sub-specialties has continued extensive use of tetracycline both pre- and post-operatively. It is my distinct impression that the number of wound infections experienced by this service is certainly in part influenced by this practice.

I wonder if the time is not coming when one might be medico-legally responsible now if he *does* give prophylactic antibiotics in view of the current hospital situation with staphylococcus wound infections.

Dr. Rosenthal: I think the medico-legal implication in all of this work, by today, should be common knowledge in the professions of both medicine and dentistry. That penicillin is a drug capable of producing severe reactions, and that it behooves the doctor to make inquiries about the patient's reaction to previous penicillin, to find out whether it is safe to give to him. Now true enough, there are cases we have on record now where there was no previous penicillin given, and the source of it might very well have been the milk. Dr. Long says even the sucking of the penicillin lozenges which were first bought innocently in the drug store might sensitize the patient without any antibiotic action, but with sensitization going on just as well. But the point is, medico-legally one should make inquiries, because if it comes to legal action, there might be some retroactive responsibility.

Dr. Schreck: May I ask, do you skin test these individuals if there's a history of sensitivity?

Dr. Rosenthal: After what all of you people have said here tonight on the panel, I wonder whether it's necessary to use penicillin when you find out that there is a sensitivity, and go through the bother of a skin test. There are many other antibiotics which you have mentioned which have a broad enough spectrum of activity without the specific sensitivity of penicillin.

Dr. Long: Recently there was a paper . . . many of you have read it . . . in the New England Journal of Medicine apropos of an eye and scratch sensitivity test for penicillin, using a drop of a certain solution of penicillin. Within the last three weeks in the New England Journal, there's a letter from a doctor who used this method of conjunctival and skin testing. He almost killed a patient.

Dr. Rosenthal: The original report came from an army camp in Germany.

Dr. Long: Yes, the original report did, but I forget who the young man was who wrote the letter in.

Dr. Schreck: It's been my view for a couple of years that skin tests do not tell you what the sensitivity situation is in the individual, so why do it. Secondly, it is a dangerous procedure in and of itself; so I would not do it under any circumstances.

Dr. Pulaski: There's one point that hasn't been stressed here that I think is important—that the great majority of deaths from penicillin immediately after an injection had been from repository preparations of penicillin.

Dr. Long: I'd like to also stress another thing. If you look over the death records of patients dying of anaphylactic reaction to penicillin where a good

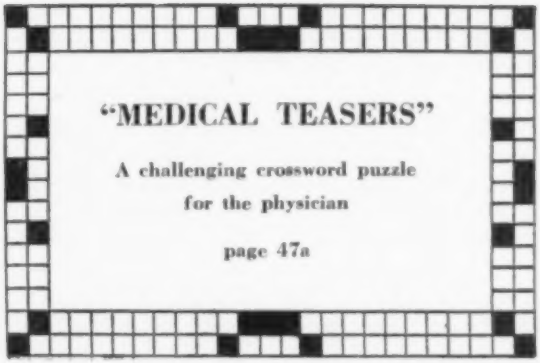
history has been gotten, a large number will be found to have had asthma, or have had some other kind of allergic reaction. I would never give penicillin to anyone who was already allergic to anything, because such individuals sensitize too easily.

Audience: Some of these were given to patients in the process of an asthmatic attack.

Dr. Schreck: Yes, that's right.

Dr. Long: Well, there was a woman out on Long Island who died because her doctor gave her an injection of penicillin while she was having an asthmatic attack.

Dr. Pines: I want to thank the panelists for their interesting and informative discussion. I think we all enjoyed it very much.



Section V. A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him, and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

PRINCIPLES OF MEDICAL ETHICS
J.A.M.A. 164.1484 (July 27), 1957

Medical Ethics and Etiquette

The fact that a physician has the right to choose whom he will take care of does not seem too well understood, either by doctors, or the laity. A study of newspaper files of alleged callousness on the part of doctors, shows that a misunderstanding of this point is frequently the basis for complaints made to medical societies or, as happens only too frequently, in the public press. Conversely, the right of the patient to choose his doctor must be preserved in any free society. The "free choice of physicians" must be considered a right of our people.

We must, however, remember that in an emergency, physicians must respond, unless incapacitated by illness, by being engaged in the care of another patient, or away from their places of residence. This means that physicians must not pass or leave the scene of an accident until the injured are properly cared for on an emergency basis. They also must respond to emergency calls resulting from heart attacks, poisonings, attempted suicides, hemorrhage, etc., even though the emergency for which they are called may well be out of their field of competence, or they believe that other physicians will reach the scene of the emergency before they do. By always being ready to respond to a call, the physician protects his own good name and that of his profession. He must bear in mind that the most frequent and often virulent public criticism of our profession results from the fact that some one who was injured, or ill, or someone who was frightened by the sight of injury, or illness, could not get a doctor promptly. From our experience we know that frightened and unenlightened people may become terribly muddled in an emergency and phone every doctor in the book. We must make allowances for this, even though our natural tendency is to be intolerant of their lack of understanding.

This is the sixth in a series of articles on the revised Principles of Medical Ethics of the American Medical Association.

There are certain rules of conduct which must be observed by a physician who has responded to an emergency call. To begin with, if several doctors arrive at the scene of an accident or emergency, *he who arrives first is in charge*. In the emergent situation a physician called to see another physician's patient, should provide only for the immediate medical needs of the patient, and should be ready to stand aside after reporting what he has done, when the patient's physician arrives. If the emergency is obstetrical in nature, and a physician delivers a colleague's patient, he is entitled to a fee for the services he has rendered. This is also true for other services rendered in emergencies. As is only natural in our profession we assume the same responsibilities, and exercise the same zeal in the treatment of a colleague's patient as we would with one of our own patients.

Once an individual has entrusted himself to a physician's care, that physician must do his utmost for that patient, regardless of his personal feelings, until he has either been dismissed by the patient, or he himself has given adequate notice to the patient that he will, or can, no longer take care of him. "Adequate notice", I believe, should be designed as one in writing or in printing, and should reach the patient about a month prior to the termination of the doctor's service. The most common instance in which a doctor might wish to notify his patients of the termination of his services is on retirement. When a doctor is going to be incapacitated, or absent from practice for any extended period of time, he should notify his patients.

The final injunction in this Section, which has to do with solicitation of patients, is one which must be defined, in certain respects, relative to local customs and traditions. It is considered ethical for a physician to place a professional card in medical journals in certain areas of this country. Furthermore, in towns and smaller cities, the newspapers frequently carry the professional cards of the practitioners in the town.

In all other respects, solicitation of patients is not only unethical but will bring down the wrath of fellow practitioners on him who attempts it. The ban on solicitation is designed to protect the public from the glib salesman or advertiser. This is especially true if solicitation is suspected when one sees the patient of a colleague in an emergency, or in the absence of the colleague. A doctor must also use great care, no matter what the provocation or occasion may be, not to denigrate other doctors. However, this injunction does not mean that one should not follow the principle outlined in Section 4, which deals with the exposure of unsavory colleagues.

It also should be made clear that the injunction relative to advertising and solicitation applies to groups of physicians and hospitals as well as to individual physicians. While it is permissible to use a plaque M.D. on a physi-

PREAMBLE **"These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws, but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public."**

cian's car, M.D. or Doctor of Medicine on cards and stationery, to announce simply the opening or closing of an office, to include the name of a deceased physician (with dates of birth and death) on the stationery of his group or clinic, a physician should not broadcast reprints, nor should he permit his name to be included in commercial directories other than the telephone book. He should be very careful relative to statements to the press, or to what he may say over the radio, or when participating in television programs. In all of these areas, it is often best to consult first with the proper authority of the local medical society before doing anything.

It is not considered a breach of etiquette if a physician permits his name to be used in the promotion of civic enterprises.

In conclusion, I would also suggest the doctor's wives observe certain of the precepts which are included in this Section if they wish to be a real help to their husbands.

L-NORADRENALINE IN MYOCARDIAL INFARCTION

"At present noradrenaline is considered by many to be the drug of choice in the treatment of shock following myocardial infarction. The view is widespread that its value is enhanced by the absence of any central effect on the myocardium.

"Experimental and clinical studies demonstrating the tendency of noradrenaline to produce cardiac arrhythmias are presented.

"It is suggested that, in view of the dangers of producing arrhythmias, electro-cardiographic supervision should be adopted if this drug is to be used in the treatment of cardiogenic shock."

T. R. Littler and C. S. McKendrick. The Lancet, Vol. II, No. 7000, P. 827



PERRIN H. LONG, M.D.

EDITORIALS

Animals Will Bite

We are coming up to the season of the year when thousands of children will be transported from their familiar surroundings to environments peopled by strangers, both human and animal. Thousands will be bitten by these animals during the summer, and this creates a major problem as far as accident prevention is concerned. Hugh A. Carithers of Jacksonville, Florida, has studied this in his private practice.[1] In twenty months he encountered one hundred and fifty-seven children who had been bitten by mammals. One hundred and thirty-two bites were inflicted by dogs, seven by cats, five by horses, four by squirrels. The others ranged from hamsters to racoons. One hundred and fifty-one of the bites occurred in children aged five to fifteen years. Two-thirds of the bites were on the head or upper extremities. None of the animals appeared to be rabid, but thirty-one of the children received some rabies vaccine, while three were administered anti-rabic serum.

Why were they bitten? Mainly because

the children were at fault. The animals were kicked, pinched, squeezed, slapped, lunged at, had their tails pulled, hit with sticks, or were being teased. Some bites occurred when children were trying to separate fighting animals, and in four of the five instances of horse bites, the horses seem to have deliberately bitten the children.

Dr. Carithers feels that "the emotional and educational value of pets far outweighs the danger of bites and disease to which children are subjected from this source". He suggests seven rules which, if followed by parents, will decrease the chances of their children being bitten.

- "Children should not own pets until they can care for them and show discretion in their handling. Such ability is rare under the age of four years and unusual under the age of six years.
- "Usually, older animals are to be preferred to immature ones as pets for young children.
- "In the early years, children should be taught that animals have rights, including an existence free from pain and excessive teasing.
- "In the early years, children should be taught to avoid all strange animals, especially sick and injured ones. This precaution does not mean that a fear of dogs, cats, and other domestic animals should be created.
- "Even as toddlers, children should be taught not to trespass, and as older children, when riding bicycles, they should deliberately avoid routes where dogs are known to chase vehicles.
- "Under supervision of an adult, children should make friends with the pets in their neighborhood.
- "Children should be instructed not to quell a fight between animals even though their own pet is involved. Instead they should call for an adult, use a garden hose on the animals or try to get their pet away from the melee by cajoling."

These are sound rules and there can be little doubting the decrease in animal bites which would take place, if parents could be persuaded to teach their children to follow them.

More About Asian Influenza

Enough time has elapsed to permit certain observations to be made on the first pandemic wave of "Asian" (the 1889-92 pandemic) influenza viral infection and to *speculate* on what may be in store for us, and what might be done about it.

What we have just experienced was a pandemic, as every continent was affected, although, as in all recorded influenza pandemics, some areas got off more lightly than others. However, as far as mortality rates were concerned, it was a "light" pandemic. It is stated[1] that in the epidemic at Abadan the death rate was 1 in 9,000; in Malaya, 1 in 40,000; and in West Pakistan, 1 in 46,000. In England the epidemic was accompanied by a rise in the number of deaths due to other causes, particularly to diseases of the respiratory tract and the circulatory system. The same appears to have been true in the United States. It was estimated[2] "that deaths

1. Carithers, H. A., A.M.A. Jnl. Dis. Child., Vol. 95, No. 2, Pp. 150-155, Feb., 1958.

from influenza accounted only for one-fourth to one-third of the increased mortality occurring during the epidemic period." This is undoubtedly true, because it is easy for the doctor in reporting a death, to emphasize the role of influenze in the causation of death due, let us say, to myocardial failure, pulmonary fibrosis, etc. Then by the regulations governing mortality classifications, the death is listed as one from influenza. It is interesting, however, that the doctors who have reported on death during influenza (or from influenza) have stressed the fact, that few deaths occurred in individuals, who were fit prior to coming down with influenza.

The epidemic was explosive in nature when it struck. In England[2] the death rates for influenza were at their peaks in the great towns of that country in the period between the weeks ending the 5th and 19th of October. New claims for sickness peaked between the weeks ending September 28th and October 19th. Notifications for pneumonia reached their peaks during the same weeks. The epidemic was relatively light in the London and South-east region, and the East and South regions and Wales had a more favorable experience than the rest of the country. The South-west region was hardest hit. This difference in the incidence and severity as measured by morbidity and mortality rates, is difficut to explain but does exist in all great epidemics of influenza. In the United States[3] the peak week was that of October 13th to 19th with the major period of the epidemic extending from September 29th to November 24th.

As befits a true pandemic of influenza, morbidity rates from "Asian" influenza were very high. In an interesting report of his experiences in a general practice in South London during the epidemic outburst of influenze, John Fry[4] reported a total incidence of 25 percent in his practice. In Abadan[1] in a controlled population of 143,000 oil company employees and their dependents, 44,921 developed influenza, a morbidity rate of 31.4 percent. Fry[4] made the very interesting observation that the lowest morbidity rates was noted in his patients who were aged 70 years or older. In the United States[3] it was also noted that the lowest attack rate for acute upper respiratory diseases involving one or more days in bed occurred in the age group "65 and over." This permits one to speculate whether this apparent resistance to the disease in these aged people in South London or in the United States could conceivably have been due to the fact that they had been exposed to the "Asian" virus during the pandemic of 1889-92, and had developed a degree of immunity which resulted in their being protected during the pandemic of 1957. This could be so.

Clinical descriptions of the disease vary little from one observer to another. Almost all were impressed with the suddenness of onset. (In your Editor's case, the onset occurred while walking five feet from his chair to a bookcase. In less than two minutes he changed from being a well man to a very sick one.) The malaise, prostration, chills, headache, and pain in the back, limbs and muscles were very common. Runny noses, soreness of the throat, and chest pain were frequently complained of.

Profuse sweats occurred in many instances, and the fever ranged up to 106° F. in some patients. Dry, explosive coughs developed in many individuals.

Complications were limited almost entirely to the respiratory tract. Fulminating hemorrhagic pneumonitis apparently due to the virus itself has been reported. Tracheo-laryngitis, bronchitis, and bacterial pneumonia occurred as the major complications. Staphylococcal pneumonia was reported as occurring, and as being quite a fatal complication, but fortunately for everyone concerned, the greatly feared widespread super-infection with resistant staphylococci did not occur. As was pointed out above, a major difference between the pandemics of 1889-92 and 1957, and that of 1918-19 was the lesser incidence and severity of the complications of, and the infections secondary to, influenza.

In general, no new ideas of therapy were developed. Aspirin, fluids, and anti-biotics when complications made their appearance, were used by most physicians. One interesting therapeutic suggestion was made by Walker and his associates.[5] They state that "in patients with fulminating staphylococcal infection the prognosis is probably related more closely to the virulence of the infection than to treatment; but two points are evident:

1. Unrelieved respiratory obstruction is an important cause of death in these cases, and must be treated as a matter of supreme urgency (by tracheoscopy or bronchoscopy).

2. No time must be lost in starting effective antibacterial treatment, and for that reason the chemotherapy must be planned on the assumption that the casual organism will be resistant to one or more of the commoner antibiotics."

There is a very interesting side light on the epidemic occurrence of influenza in the United States this past fall, and that has to do with immunization against influenza. In August, September and early October, everyone was whooping it up about getting everybody immunized. However, as soon as influenza became widely epidemic (and vaccine became more plentiful), interest in utilizing the vaccine decreased rapidly, with the net result that today *millions upon millions of cubic centimeters* of Asian influenza vaccine may go to waste in the iceboxes of doctors, druggists, and pharmaceutical manufacturers.

It would seem high time that doctors should take a close look at the question of vaccinating against Asian influenza. The evidence is now in hand as to its effectiveness. First take the data reported by the British Medical Research Council[6]. They definitely show that within three weeks after a single injection of the vaccine, the majority of subjects will have antibodies in their blood, and that the more potent the vaccine administered, the higher, by and large, will be the geometric titer. If two injections of the vaccine spread three weeks apart are given, and then tests are made for serum antibodies, three weeks after the second injection, the boosting effect of the second dose will be found to be considerable, and the geometric mean titer of antibody will be markedly increased. Field trials with the British vaccine definitely indicated that a *single* injection of vaccine gave a protection of the

order of sixty-seven percent within two weeks after the vaccine had been administered. The experience of American investigators has been similar.[7, 8] To quote Davenport:[8] The results of the vaccine trials have provided the first specific evidence of clinical effectiveness of vaccine against the current epidemic of Asian influenza."

There is every reason to believe that a very high degree of protection can be obtained by the administration of three doses of 1 c.c. each of the vaccine given at 4 to 5 week intervals, this to be followed by a booster dose of ½ c.c. of the vaccine if and when "Asian" influenza becomes epidemic again. To be sure, the question can be raised, "How does anyone know that another wave of 'Asian' influenza will come along?" No one can be absolutely certain about this one way or the other; one can only go on the basis of the experience gained from the studies of the 1889-92 and 1918-20 pandemics of influenza, to predict that recurrent waves of the pandemic of 1957 will occur. On this basis then it would appear wise to your Editor to complete all courses of vaccine in individuals in whom the courses were started but not finished (providing they did not have influenza last fall), and to initiate vaccination in all individuals who went through the past fall and winter without having anything resembling influenza. *When one has a good vaccine, it should be used. The next wave may not be characterized by such mild attacks.*

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6. Progress Report of the Medical Research Council, M.M.J., no. 5068, p. 415, 22 Feb., 1958.
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A Fallacy in Clinical Medicine—
Vibration Sense in the Ageing and the Aged

"The vast majority of people, regardless of age, have an intact sense of vibration when tested clinically with the ordinary tuning fork. Where such a sensory impairment is present, one should seek a cause other than ageing."

Henry A. Himel and R. Ian Macdonald
The Canadian Medical Association Journal, Vol. 77, No. 5, p. 462

THE LONG AND SHORT OF IT

From Your Editor's Reading

The Fifth International Congress of Internal Medicine

The Fifth International Congress of Internal Medicine met recently at the Sheraton Hotel in Philadelphia under the presidency of Sir Russell Brain (who also happens to be the president of the Royal College of Physicians). Over a thousand physicians were in attendance, and while no startling discoveries were announced during the meetings, a hearer did have an excellent opportunity to become familiar with the opinions and practices of a number of outstanding physicians in certain of the controversial areas of medical therapy.

The problem of fatty foods and their relation to atherosclerosis was discussed at some length by several speakers. Professor Haqvin Malmros and his colleagues of Lund, Sweden, reported that as a result of their epidemiological, dietary, chemical and clinical studies, they were convinced that corn oil, when added to the diets of patients having various types of hypercholesterolemia, in amounts sufficient to provide forty percent of the caloric supply of the patients (obviously quite a bit of oil) produced a decrease in serum cholesterol in almost every patient placed on such a regimen. Dr. Alexander L. Myasnikov, Leader of the Institute of Therapy of the

Academy of Medical Sciences, Moscow, U.S.S.R., reported that cholesterol feeding alone, while producing extensive atherosclerosis in rabbits (as reported by Anichkoff in 1914), did not cause the rabbits to develop myocardial infarction. However, if, in addition to cholesterol feeding, the rabbits were forced to overexercise by being placed on a treadmill, the animals developed dyspnea and electrocardiographic changes which were considered to be typical of myorcardial infarction. Then, at autopsy, it was demonstrated that extensive areas of infarction were present in the heart muscle of these rabbits.

Dr. Irving S. Wright of Cornell Medical School, assisted by Professor Robert Hunter of Dundee, Scotland, Dr. J. W. Keyes of Henry Ford Hospital, Dr. James A. Evans of the Lahey Clinic, Dr. Murray Weiner of New York University Medical School, Professor Astrup of Denmark, Professor Kohler of Switzerland, Dr. Paul E. Lucomosky, Moscow, U.S.S.R., and others conducted a panel on the use of anticoagulants in coronary arterial disease. It should be said initially that all members of this panel seemed quite enthusiastic about and sold on such a use for anticoagulants. No "doubting Thomases" were included. From the discussion one gained the following:

1. The greatest gain in life from the use of anticoagulants in patients having myocardial infarction occurs in the first two years after the infarction has taken place. After that, the death rate from other attacks of infarction is about the same in treated and untreated patients.

2. One must know the rapidity with which the anticoagulants which has been selected for use produces its effect. For example, Tromexan produces its effect rapidly, while Dicumarol acts more slowly.

3. The physician must always remember that he is using dangerous tools when he prescribes anticoagulants as therapeutic agents. However, if the patients *are followed carefully* there is little risk. The education of the patient about the drug which he is taking was considered very important.

4. One speaker felt it was definitely undesirable to administer anticoagulants to patients who are chronic alcoholics.

5. The anticoagulants do not produce allergic manifestations.

6. If the diagnosis of myocardial infarction is in doubt, do not administer anticoagulants.

7. Professor Kohler stated that he treats all patients having a myocardial infarction with anticoagulants, even those who, he believes, are instances of impending infarction.

8. Even when properly treated and on treatment, a patient may have an infarction.

9. Dr. Evans described a group of twenty patients in which bleeding occurred in seven individuals and was severe in four. A few red blood cells in the urine is not an indication for stopping the use of anticoagulants.

10. The so-called "rebound phenomenon" with a thrombotic episode may follow the abrupt discontinuance of anticoagulant therapy. The dose of these compounds should be decreased slowly when they are being discontinued.

11. In a few patients one variety of anticoagulant may not be effective while another one will.

12. There is no satisfactory bedside test for "prothrombin time," according to this panel.

13. Anticoagulants should not be

given to patients who have had a "stroke" and whose diastolic blood pressures are over 110, or whose systolic pressures are over 180.

14. *All patients who are receiving anticoagulants should receive and carry a card stating this fact and giving the name of the anticoagulant they are receiving.* Such cards may be obtained from the American Heart Association.

Dr. Robert L. Levy of Presbyterian Hospital, New York City, discussed "Diet and Anticoagulants in the Treatment of Patients with Ischemic Heart Disease." He made what to me were several very important and interesting points. First he stated that he believed that the regulation of the diet of the coronary patient is of importance, and that certain data suggest that fat may have something to do with the disease. However, while a number of workers in the field feel that cholesterol is important, Dr. Levy made the point that it is the endogenous cholesterol metabolism which may be involved, not the exogenous cholesterol metabolism, in coronary arterial disease. Furthermore, he inclined to the belief that the level of the cholesterol in the serum is not a reliable indicator in any one individual. He then discussed anticoagulants, and stated that in one hundred patients who died of acute myocardial failure and coronary disease, fifty of whom had received therapy with anticoagulants, while the other fifty had had no such therapy, the incidence of mural thrombi, pulmonary emboli, and systemic emboli was found to be the same in both groups at autopsy. He also pointed out that the occurrence of rupture of the heart occurred three times more frequently in the group of patients treated with anticoagulants. This should make us all stop and think.

Further Observations Concerning the Prognosis of Myocardial Infarction Due to Coronary Thrombosis

"1. A further analysis of 200 cases of coronary thrombosis with myocardial infarction seen in consultation between 1921 and 1930, inclusive, has shown that seven were examined within six hours, 14 more within two days, and 35 more within the first week, making a total of 56 during the first week. During the next three weeks, 34 more were seen, or a total of 90 in the first month. Thirty-two others were seen in the next two months, making a total of 122 patients seen during the acute attack and convalescence therefrom. The remaining 78 patients were seen in consultation later than that.

2. It is of much interest that there was a steadily decreasing mortality during the first three months. Of 35 who died in the first month, 18 died in the first week and eight in the second week. Of the 42 who died in the first three months, 26 succumbed in the first fortnight, nine more in the second fortnight, and only seven others in the second and third months. It should also be noted that coronary thrombosis kills a certain, at present indeterminable number of patients too quickly for them to be included in any clinical series.

3. A comparison of the 25 patients among the 90 who were seen by P.D.W. during the first month of their illness and who survived that month and yet died within three years of the onset of their attacks with 23 of this same group of 90 who survived five years showed that, among the former, 14 had congestive heart failure (six had coronary insufficiency also), seven had angina pec-

toris without congestive failure, and only four were free from evidence of either complication during their convalescence after the first month; among the latter 23 (who survived five years), only one had congestive failure, four others had angina pectoris, and 18 had recovered completely from their acute attack, showing neither complication.

4. As emphasized in the 1941 and 1956 reports, the most important clue favoring longevity and a return to a normal program of life was found to be the degree of completeness of recovery after the first month of convalescence from the acute attack. Of the 24 cases who showed neither myocardial nor coronary insufficiency, 18 (75%) survived five years, while the average survival of these 24 cases was 12 years.

5. Among those who, free of complications, completely recovered from their attack, the eventual cause of death was most commonly coronary, either recurrent thrombosis or sudden death, with or without angina pectoris.

6. There were no mild cases in the whole group of 200 patients, either because such cases are missed or because a consultant was not called in to see such patients. There were 163 of severe and 37 of moderate grade.

7. Not infrequently during the 1920's the treatment and co-operation of patients such as those seen then by P.D.W. in consultation were inadequate.

8. It should be added that our attitude concerning the prognosis of coronary thrombosis with myocardial infarction will undoubtedly be much more optimistic in the future than it has been in the past because of the recognition of mild cases, the better teatment and program after recovery, and the more satisfactory understanding and co-operation of the patient."

By Paul D. White, Edward F. Bland and Samuel A. Levine
Annals of Internal Medicine,
Vol. 48, No. 1, Jan., 1958.

Changes in Serum-Potassium Level and in pH of Arterial Blood in Respiratory Acidosis

Serum-potassium levels higher than 5.5 mEq. per litre were observed in 7 out of 16 patients with emphysema.

Of these 7 patients 5 were acutely ill with respiratory infection. In 3 of them serum-potassium levels of 7 mEq. per litre or higher were recorded; these 3 were the most severely ill in this series and presented the clinical picture of carbon-dioxide narcosis.

In 3 patients the serum-potassium levels rose rapidly during oxygen therapy. In 1 of these the potassium change was associated with a rapid decrease of the pH of the arterial blood; another patient showed a slight rise in serum-potassium level in association with an increase of pH due to hyperventilation.

The rise in serum-potassium level probably represents a transfer of potassium from the cells to the extracellular fluid. This may be due to an increased pCO_2, and experimental evidence suggests that the potassium may be liberated from the muscles. This is not the only mechanism, however, because the serum-potassium level may also rise slightly during hyperventilation. Impaired renal function may also be a factor.

Rapid rises of extracellular concentration might contribute to the unexplained sudden deaths which occur in cor pulmonale. The liability of such patients to develop carbon-dioxide nar-

cosis as a result of intensive oxygen therapy is well recognized, and occasional hyperkalaemia developing under these conditions may be a further reason for caution in the administration of oxygen.

By H. Priscilla S. Foulds, David Mendel, and Robert De Mowbray
The Lancet, No. 1017, Vol. I, Feb. 22, 1958, P. 409

Working Women 35 and Over

"The number of women 35 years of age and over in the labor force jumped 50% in the past ten years, from 8½ to nearly 13 million from 1947 to 1956, according to a new Census report. Less than half of this increase, however, is due to population growth; more important is the proportion of women in this age group now working outside the home: 35.2% in 1956 compared with 27.7% in 1947. One in every three women 35 and over is now in the labor force. In 1947 it was one in four. Before World War II it was one in five.

In this ten year period, the number of women under 35 in the labor force increased only 5% and of all men 10%. The previous peak of labor force participation by women 35 plus, 30.9%, achieved during World War II, was equalled by 1950 and surpassed every year since.

Employment opportunities for women 35 and over have been enhanced by steady expansion of the trade and service industries and the comparative shortage of young workers resulting in part from the low birth rate during the depression of the 30's.

Moreover, there has been an increasing tendency for married women 35 years and over to enter the labor market; at present they make up the large majority of all working women in this age group. In 1956 working wives over 35 represented some 35 percent of the total female labor force, whereas in 1947 they accounted for only about 25 percent.

The upswing in employment among women over 35 took place in the types of jobs traditionally held by women. The largest single gain was in the clerical field, where the proportion holding such jobs jumped from 18 percent in 1948 to 23 percent in 1956. Among the major industry groups, trade and service activities alone accounted for three-fourths of the over-all job expansion.

Although part-time work among women has risen in recent years, most (73.6 percent) of the employed women 35 and over in nonfarm industries had full-time jobs in 1956 (compared with 76.6 percent in 1947). In the age 65 and over group, 58.2 percent of the employed women worked full-time as compared with 62.2 percent ten years ago. The average workweek for women 35 and over in 1956 was between 37 and 38 hours; for 65 and over it was 34 hours.

Regularity of full-time employment is increasing among women over 35, especially among those in the 45-64 year age group. In this latter group, the proportion who had full-time employment increased from around 40 percent to 45 percent, while dropping by several percentage points among women under 25.

Unemployment (out of work and looking for a job) among women, although fluctuating irregularly over the decade, has been consistently lower for those 35 and over than for any other age group. The unemployment rate averaged 3.2 percent for women over 35

compared to 9.0 percent for 18-19 year-olds and 5.6 percent for those 20 and 24. However, as with men, the older age group, once out of a job, tend to remain unemployed longer. In 1956, unemployment for women over 45 averaged about 13½ weeks; for the 18 to 24 group less than 8 weeks."

Editorial,
Aging No. 35, September, 1957

A Critical Evaluation of Anticoagulant Therapy in Peripheral Venous Thrombosis and Pulmonary Embolism

"Venous thrombosis and pulmonary embolism remain a major complication of operation, trauma, and heart disease. An appreciable reduction in morbidity and mortality from thromboembolism must await more accurate clinical or laboratory diagnosis of this process or a rational, economically feasible program for mass prophylaxis.

Phlebothrombosis and thrombophlebitis are manifestations of the same disease entity. In patients in whom a clinical diagnosis of venous thrombosis or pulmonary embolism can be established, anticoagulant therapy can effect a significant reduction in morbidity and mortality. The experience of the University of Michigan Hospital with respect to this disease and its complication rate under a program of anticoagulant therapy has been presented. An evaluation of those factors which might influence the incidence of complications and the approach and problems relative to such an analysis have been discussed.

Thromboembolism continues to be 'one of those diseases which demand minute study, because doubts still exist as to the nature of the affection, notwithstanding the frequent opportunities which occur of observing it' (Trousseau, 1868)."

By W. W. Coon, J. W. Mackenzie
and P. E. Hodgson
Surgery Gynecology and Obstetrics,
Vol. 106, No. 2, February, 1958.

Anoxia in Emphysema

"The effect of acute and chronic anoxia on the body was studied in the emphysematous.

Besides its better-known effects on the central nervous, cardiac, respiratory, and haemopoietic systems, acute anoxia can cause functional renal and hepatic failure, which are reversible if the anoxia is relieved.

If the anoxia is severe or unrelieved, irreversible and histologically demonstrable changes may take place in the structure of the liver but not in that of the kidneys. The functional renal failure is shown by azotaemia, and that of the liver by a reduction in factor VII in the plasma. The measurement of the blood-urea level and a prothrombin activity are therefore additional laboratory aids in estimating the severity of the effects of anoxia.

The spontaneous bleedings which may occur—usually terminally—in the severely anoxic emphysematous probably arise from the anoxia not only acting as a severe stress and causing acute peptic ulceration but also damaging the liver and capillaries. The haemorrhage from the nose, into the internal organs, and following dental extraction in those patients whose prothrombin activity is only moderately reduced might be explained by the concomitant damage to the capillaries by anoxia.

The usual blood changes in the anoxic emphysematous are an increase in the mean corpuscular volume and haemato-

crit which seem to be related more to changes in carbon-dioxide tension than to oxygen saturation. It has been said that polycythaemia is uncommon in the anoxic emphysematous in comparison with healthy persons living at at high altitude, given the same degree of oxygen unsaturation; but the comparison may be invalid because, whereas the anoxia is constant at high altitude, in the emphysematous it may fluctuate, and the fluctuations may raise the arterial oxygen saturation so high that polycythaemia cannot be expected. However, this is only a partial explanation because, even when polycythaemia does develop, it is less than one would expect at a comparable altitude. The combined effects of chronic lung sepsis, deficient intake of iron, occult blood loss, inhibition of the bone-marrow or of a humoral factor by severe anoxia, and interference with the formation of haemoglobin by anoxia may all, at one time or another, contribute to the reduced haemopoietic response. Indeed, iron-deficiency anaemias are not uncommon, and every patient with chronic anoxia should receive iron, especially during an acute anoxic episode.

The administration of oxygen for the relief of anoxia, especially if severe, in the acutely ill emphysematous can be dangerous. The danger arises from the combined effects of hypercapnia and acidaemia. A slow rate of oxygen flow allows compensation to take place which avoids or minimises the effects of carbon-dioxide narcosis. It is emphasized that coma resulting from oxygen therapy is not necessarily fatal. An example is given of a further rare danger of oxygen therapy—i.e., oxygen addiction.

Severe anoxia, if unrelieved, can cause irreversible changes in most of the human organs, and it is our duty, exercising due caution, to relieve it whenever possible. Whereas the ill effects of carbon-dioxide narcosis may be reversible, those of unrelieved anoxia are not."

by Thomas Simpson
The Lancet,
Vol. CCLXXIII, No. 6986, July 20, 1957

Etiology of Pre-Eclamptic Toxemia and Eclampsia: Fact and Theory

"Under the influence of corticotrophin produced by the placenta and the anterior lobe of the pituitary gland (the latter stimulated by estrogens secreted by the placenta) the adrenal cortex in pregnancy produces excess of cortical metabolites, including glucocorticoids and mineralocorticoids.

There are several resemblances between normal pregnancy and Cushing's syndrome, which is usually due to hyperplasia of the adrenal cortex and is in 90% of cases accompanied by hypertension. In normal pregnancy there must therefore be a pressor substance produced in excess (compared with the non-pregnant individual) by the adrenal cortex. The blood in normal pregnancy contains 17 - hydroxycorticosteroids equal in amount to or exceeding those in Cushing's syndrome.

Every pregnant woman would become hypertensive if it were not for the protective placenta which furnishes, it is suggested, an oxygen-sensitive oxidase that inactivates pressor hormones from the adrenal cortex. The presence of this enzyme would explain the fact that cortical hormones, which is the non-pregnant individual cause hypertension and edema, are without effect in healthy pregnant women. If from any cause the placenta is made ischemic and its

oxygen tension lowered, the protective enzyme is made ineffective, and hypertension results.

The excess of chronic gonadotrophin present in pre-eclamptic toxemia can be explained by its non-destruction. There is evidence that it causes the hypersensitivity of the vascular system known to exist in pre-eclamptic toxemia.

In 25-30% of women who have been normotensive during pregnancy and labor the blood-pressure reaches hypertensive levels in the first three days after delivery. This can be corelated with Gemzell's (1953) findings that the level of 17-hydroxycorticosteroids in the blood before labor is increased by nearly 100% immediately after the birth of the placenta. Dangerous eclamptogenic rises of blood-pressure often occur in toxemic patients after delivery. It is suggested that the birth of the placenta and the loss of its inactivating effect on pressor hormones explain the onset of eclampsia in the first three days of the puerperium in women who have had pre-eclamptic toxemia before delivery."

By F. J. Browne

The Lancet, No. 7012, Vol. 1 for 1958, Jan. 18, 1958

Maternal Obstetric Injuries in General Practice

"The prevention of the birth injuries so far discussed has been fully dealt with in all the text-books and emphasized in our training. We have the knowledge to prevent them, but we do not always have the facilities.

Adequate ante-natal care is essential for safe obstetrics, and this includes the following measures: (1) careful general examination at the first visit; (2) blood typing (including the Rh status) and serum protein determinations; (3) monthly examinations for the first six months, fortnightly visits for the next two months, and then weekly visits; (4) the patient to be weighed, the urine tested, the blood pressure taken, and the height of the fundus checked at each visit; (5) when abnormalities, however slight, are detected, appropriate action to be taken.

To carry out this program for every patient in this land of vast distances means that transport difficulties must be overcome, the expense of the transport must be brought within reasonable bounds (perhaps "assisted passages" for our best migrants could be considered), and the patients must be educated to accept the necessity for ante-natal care.

Adequate hospital facilities are essential.

I believe that there are very few domicilliary confinements in North Queensland in those areas where medical care is available. It is perhaps a counsel of perfection to advise that a blood transfusion should be ready within ten minutes of the decision to give it; but serum or serum albumin can be so available at a hospital, and blood a very short time later.

Serum albumin is available in every town where there is a medical practitioner. There are 110 blood donor panels in Queensland, available to every hospital in Queensland.

It is desirable that it should be possible to begin an emergency Caesarean section within forty minutes of the decision to operate.

A blood bank at each hospital or town must now be considered essential.

If adequate ante-natal care and adequate hospital accommodation are available, then the next factor in reducing

maternal birth injuries is the judgment and skill of the general practitioner. There is not one of us who has not wished, at some time or another, that he or she knew a lot more about obstetrics; I think that we have all done something about it in the form of reading, advice of consultants and the mastering of new techniques. It is a frightening thought for the new graduate that his training is considered sufficient for him to go to an isolated one-man town and to deal with all obstetric emergencies. Obstetrics is a very large part of general practice as we know it in North Queensland, and if we are to reduce maternal injuries we must be prepared to spend a lot of time in preparing to meet those emergencies which we know will occur." By I. Chenoweth
The Medical Journal of Australia,
Vol. II—44th year, No. 15, Oct. 12, 1957

The Reproductive Characteristics of Diabetic Men

"One hundred and sixty-seven married men suffering from diabetes mellitus were chosen at random from two outpatient diabetes clinics. They were interviewed with respect to their reproductive histories. The data were compared with those obtained by similarly interviewing a control population selected at random from among married nondiabetic men attending an outpatient dental clinic. The diabetic men's wives had a significantly higher incidence of abortions than did those of the control population. The incidence of abortions among the wives of the diabetic men before and after the clinical recognition of the husbands' diabetes did not differ significantly. The diabetic group did not differ significantly from the control population with respect to number of conceptions, premature births, stillbirths, live births, sex ratio of offspring or birth weights of offspring. Thus, no evidence was found to support the thesis that the children of diabetic men differ discernibly at birth from those of normal men."
By David Babbott, Alan Rubin
and Silas J. Ginsburg
Diabetes, Vol. 7, No. 1, Jan.-Feb., 1958

Comparison of Complications Following Intestinal Surgery After Oral and Parenteral Preoperative Antibiotic Preparation

"The incidence of postoperative complications in a consecutive unselected series of 261 patients who had various types of intestinal operations after parenteral administration of penicillin, streptomycin, and dihydrostreptomycin only is compared with that in a series of 243 patients who underwent various intestinal operations after oral administration of members of the tetracycline group of antibiotics.

The incidence of postoperative complications differed little (5.3 percent) between the two groups, and there was no significant difference in the mortality rate.

Preoperative preparation of the intestinal tract with orally administered tetracycline drugs produced no fewer complications in those patients whose intestinal surgery did not involve an intraperitoneal intestinal anastomosis than did simple parenteral administration of penicillin, streptomycin, and dihydrostreptomycin the evening before surgery was to be performed and subsequent to operation.

However, preparation of the bowel with tetracycline drugs given by mouth,

when intraperitoneal intestinal anastomosis was included in the operation, resulted in fewer complications than did preparation with penicillin, streptomycin, and dihydrostreptomycin."

By Donald E. Phillips, William H. Dearing and John M. Waugh

Surgery, Gynecology and Obstetrics,

Vol. 106, No. 2, Feb., 1958.

The Clinical Significance of Sternal Tenderness
The Value of Selective Marrow Biopsy in Malignant Disease

Bone tenderness, in particular sternal tenderness, may develop in patients with various disorders but is particularly common in those with bone-marrow metastases and those with myeloid reticulosis.

Selective puncture of tender bone will improve the chances of finding abnormal cells in such cases.

Selective puncture of the marrow is recommended in the investigation of obscure cases, particularly if unexplained anaemia, bone destruction, or lymphadenopathy is present.

By N. D. Gower

The Lancet,

No. 7011, January 11th 1958

Haemolytic Disease of the Newborn: the Fate of 246 Rhesus-Incompatible Pregnancies

In 1951-54 246 Rh-incompatible pregnancies were observed from twenty-eight week's gestation until delivery. 39 (15.8%) babies were stillborn, and 207 were born alive.

21 of these liveborn babies died subsequently, and 186 survived for at least fourteen days. 15 of the survivors were untraced after they left the hospital; 171 were traced and asked to attend the follow-up clinic. 159 attended, and were examined by a pediatrician, when eighteen months of age or older.

158 (64.2% of 246) were normal children; 1 was abnormal. An additional 11 infants were not seen at the follow-up clinic but are believed to be in satisfactory condition. 27 children, though normal when they left hospital, did not report to the clinic. Their fate at eighteen months is not known.

Where labor was induced prematurely, the infants survived as well as those delivered spontaneously, in spite of the fact they were more seriously affected and more premature.

By G. A. Kelsall, J. R. H. Watson and G. H. Vos

The Lancet,

No. 7008, Vol. II, Dec. 21, 1957

Further Studies on the Transmission of Staph. Aureus

Extensive surveys of the skin and clothing of nasal carriers of Staph. aureus have shown that about three-fifths have sufficient numbers of this organism on certain areas, particularly the hands and the clothing of the front of the body, to enable them to transmit their own organisms to other persons with whom they come into direct physical contact, by means of objects such as blankets or towels which they have touched, or as a result of dispersal into free air during movement.

With many carriers, the primary source of these organisms is the nose, but the number of Staph. aureus in nasal swabs gives little indication of the extent of skin and clothing contamination, or ability to disperse this organism. Nevertheless, at least one individual in the series studied in this paper had a primary source which was not in the nose

but on the skin of the perineum. Staph. aureus from this area could contaminate the skin and clothing and be dispersed during movement to much the same extent as with nasal carriers.

Thus, when possible sources of infection are being sought, the existence of non-nasal carries of Staph. aureus must not be overlooked.

By Ronald Hare and Mark Ridley
British Medical Journal,
No. 5062, January 11th, 1958

The Vascular Complications of Diabetes Mellitus: A Clinical Study

"The presence of definite and often multiple vascular complications in almost exactly one-half of a large number of diabetic patients, when considered without regard to age or duration of diabetes, reflects succinctly the nature of the problem of diabetes today. Improved treatment has resulted in prolongation of life to the point where vascular degenerative lesions have become increasingly evident. In this series, after twenty years or more of diabetes, over 87 percent of the patients had definite vascular disease. Thus, whatever etiologic factors are concerned in the production of the morbid changes, it is evident that they occur, for the most part, only after a relatively long period of time. Of the factors evaluated in this series, the incidence was most affected by the duration of diabetes. A recent review and discussion of the biochemical and other factors concerned appears in the reviews by LeCompte and Ricketts.

The most frequently observed vascular lesion was diabetic retinopathy. The characteristic microaneurysms, if not entirely specific for diabetes, are certainly most common in diabetics. In this investigation there was no certainty that diabetic retinopathy ever existed with diabetes of less than five years' duration, and the greatest rise in incidence took place between the tenth and fifteenth year of diabetes. Although there are no data presented in this study relative to the effects of careful control of diabetes over the years, others studying the same lesions have concluded that there is a lower incidence of retinopathy in the well controlled patients as opposed to those poorly controlled. At present strict control appears to be the only measure which is at all effective in reducing the incidence or delaying the development of retinitis.

In common with the retinal changes, diabetic nephopathy appeared only after diabetes had been present for fifteen to twenty years, and beyond twenty years there was evidence of disturbed renal function in over 28 percent of cases. The manifestations of diabetic nephropathy are known to be variable, and the clinical picture is not specific. The typical nodular glomerular lesion seen in microscopic sections at autopsy or, more recently, with the aid of renal biopsy, is, however, highly specific. LeCompte has challenged the view that the renal lesion is a hyalinized saccular aneurysm similar to those seen in the retina.

In contradistinction to diabetic nephropathy and retinopathy, which are more specific for diabetes, are the atherosclerotic changes which diabetes appears to accelerate rather than cause. The incidence of arteriosclerotic heart disease correlated better with age than with duration of diabetes, although both were observed to have a positive effect upon incidence. The occurrence of vascular disease in 19.2 percent of patients with diabetes of less than five years' duration was due to the fact that many of

these patients were of an age when atherosclerotic lesions of the type found are frequently present in the absence of diabetes. Similarly, an even greater number of those with diabetes of many years' duration might have had atherosclerosis without diabetes, since they were of a more advanced age group. Bell recognized this fact and indicated that only 24 percent, and not 54 percent, of the deaths of diabetics in his series could be attributed to the diabetic state, since 30 percent of nondiabetics over forty years of age also die of some form of vascular disease.

The incidence of arteriosclerotic heart disease in this study was high. It is difficult to compare data on the incidence of arteriosclerotic heart disease in living subjects because criteria vary greatly. It is probably better to compare the incidence of angina pectoris which was found in over 12 percent of the patients in this investigation who were beyond age thirty-nine. The subject of myocardial infarction in diabetics has been the topic of a previous communication.

The rising incidence of vascular complications demonstrated in this study and the likelihood of a continued rise as advances in treatment add years to diabetic lives indicate more than ever the need for a more fundamental understanding of the degenerative changes associated with diabetes of long standing."
by J. W. Bryfogle and R. F. Bradley
Diabetes, Vol. 6, No. 2, March-April, 1957.

Coronary-Artery Disease: Influences Affecting Its Incidence in Males in the Seventh Decade

Eleven Birmingham general practitioners interviewed and examined 1062 (85.4%) of the 1243 men on their lists who were aged 60-69. Those with symptoms or physical signs suggestive of coronary-artery disease were referred for full cardiological investigation, and the diagnosis was confirmed in 89 (8.4%). The prevalence seemed to be unrelated to the mental demands of the men's occupation or to their smoking habits: it was fairly closely related to the physical demands of occupation, being highest for men in sedentary work. The association between prevalence and physical demands of work was most evident among men in professional and related occupations (social classes I and II).

When all types of disease were considered together, prevalence was not consistently related to social circumstances, but myocardial infarction seemed to increase in prevalence from men in unskilled occupations (class V) to those in professional occupations (class I), whereas manifestations other than infarction were more common in class V than in Class I.

Arterial pressure was raised in patients with coronary-artery disease who had not had an infarction, and lowered in those who had. The observations suggest that the prevalence of manifestations of coronary disease—other than infarction—was approximately doubled for an increase of 15 m.m. Hg diastolic, or 30 m.m. systolic pressure.
By R. G. Brown, L. A. G. Davidson, Thomas McKeown, and A. G. W. Whitfield
The Lancet,
No. 7005, Vol. II, Nov. 30, 1957

Primary Aldosteronism

"1. Two cases of primary aldosteronism due to adrenal cortical adenomata are described. The first patient

gave a history of severe periodic paralysis for many years. The second case was virtually asymptomatic, but the patient was hypertensive and showed biochemical evidence of potassium deficiency.

2. Balance data are presented relating to the period of potassium repletion before operation and to the period following unilateral adrenalectomy. The patients were deficient of 1,000 mEq. and 400 mEq. of potassium respectively. The first patient also showed evidence of magnesium deficiency.

3. Both patients showed a normal metabolic response to surgery, with temporary retention of sodium and chloride. Very little potassium was retained after operation, although there was a considerable increase of plasma-potassium.

4. The first patient had severe chronic pyelonephritis, with considerable impairment of renal function. The second had no renal abnormalities except those referable to her hypertension.

5. The diagnosis of primary aldosteronism from potassium deficiency due to primary renal disease is discussed in detail. An anterior transabdominal exposure of both adrenal glands is considered to be the operation of choice in the former disease."

by M. D. Milne, R. C. Muehrcke and Ian Aird
The Quarterly Journal of Medicine, Vol. XXVI, No. 103, July, 1957

The Effect of Cortisone upon the Reaction of the Skin to Tuberculin in Tuberculosis and in Sarcoidosis

"The influence of cortisone upon the reaction of the skin to tuberculin has been investigated by simultaneous intradermal tests with tuberculin and with tuberculin mixed with cortisone acetate suspension.

In active pulmonary tuberculosis the action of cortisone upon the size of tuberculin reactions was variable. In subjects of high tuberculin sensitivity reactions were reduced in size or inhibited; but the inhibitory effect diminished progressively with diminishing tuberculin sensitivity, until in subjects of low sensitivity the size of reactions produced by 100 TU was unchanged. In healthy tuberculin-insensitive subjects tuberculin plus cortisone caused no reaction. In tuberculous patients whose skin had been rendered insensitive to tuberculin by desensitization with tuberculin, tuberculin plus cortisone induced reaction in 70 percent of cases. A previous observation, that tuberculin plus cortisone induced reactions in 50 percent of patients with sarcoidosis who were insensitive to tuberculin, was confirmed.

These results suggest that cortisone, possibly by its effect in prolonging the retention of tuberculin at the site of injection, permits the detection of a degree of tuberculin sensitivity too low to be detected by tuberculin alone. Among the 28 patients with sarcoidosis who failed to react to tuberculin, of whom 14 reacted to tuberculin plus cortisone, 12 had radiological or bacteriological evidence of old tuberculosis; and there was no correlation between a reaction to tuberculin plus cortisone and other evidence of tuberculosis.

These observations support the view that there is a causal rather than a casual relationship between tuberculosis and sarcoidosis in the patients investigated."

by K. M. Citron and J. G. Scadding
The Quarterly Journal of Medicine, Vol. XXVI, No. 103, July, 1957.

Golden Wedding

"For the typical young couple now entering marriage, the likelihood that both will survive to the golden anniversary is more than twice what it was for the average couple of a half century ago. Thus, for the man aged 21 who marries a girl four years younger than himself, the chances are 419 in 1,000—more than 2 out of 5—that both will survive through the next 50 years, according to mortality conditions for the white population of the United States in 1955. For the groom of 25 with a bride of 21 the chances of joint survival for a half century are 296 per 1,000, compared with 123 in the earlier period.

The typical American bridal couple today is almost certain to survive to its 10th wedding anniversary. For example, the chances are about 98 in 100 for men and women who marry in their early twenties, or one-eighth greater than they were a half century ago. Even for brides and grooms in their late 30's, the chances of celebrating a 10th anniversary are greater than 90 in 100."

Statistical Bulletin of the Metropolitan Life Insurance Co.
Vol. 38, Pp. 1-2, Nov. 1957.

Circulatory Arrest in Patients with Complete Heart Block During Anesthesia and Surgery

"It has been shown in patients with heart block, particularly those with prior Adams-Stokes attacks, that there is good reason to anticipate circulatory arrest during anesthesia and operation. Circulatory and respiratory arrest took place in six of 22 individuals with heart block undergoing operation. Fortunately there were no fatalities. Emergency thoracotomy was performed in one patient but this was probably unnecessary. The patients with heart block were in the older age groups, and mostly in the poor-risk category, because of the underlying heart diesease. Those who developed circulatory arrest, with one exception, had had prior Adams-Stokes attacks, and all but one underwent a major operative procedure. Circulatory arrest probably was precipitated by a number of factors, but the hazard of general anesthesia in some, of local anesthesia in another and of reflex initiation of arrest in several seemed fairly obvious. It has not been shown that the usual pharmacologic means for treatment of Adams-Stokes attacks were uniformly successful either before or during operation. The pharmacologic role of pre-anesthetic medications and of anesthetic agents in their possible effect on heart block has been discussed.

It is not certain that any anesthetic technic is safe. Consequently a plan has been offered in the hope of minimizing the possibility of circulatory arrest and of treating arrest should it occur."

By Leroy D. Vandam and George A. McLemore, Jr.
Vol. 47, No. 3, Pp. 529-530, Sept., 1957.
Annals of Internal Medicine,

Common Fractures of the Hand and Wrist

Fractures of the wrist, hand and fingers are probably the most common fractures cared for by the general practitioner. It is important that these fractures be promptly recognized and adequately treated in order to provide the patient with the maximum amount of function, which is so essential to the working man. A few of the more common fractures will be discussed from the standpoint of etiology, anatomy, diagnosis, and treatment.

Diagnosis. A history of injury can be obtained from a conscious adult patient who also may state that he heard or felt "something snap." There is point tenderness over the fracture site and pain on attempted movement. Swelling and deformity are common but are not always present. Crepitation may be detected but should not be sought by manipulation. X-rays in at least two places should always be taken before treatment is attempted, to establish the diagnosis and guide the treatment, and for medico-legal reasons. Repeat x-rays should always be taken immediately after reduction and immobilization are accomplished, and repeated as often as is deemed necessary during the period of immobilization to be sure that the position has not changed.

In children, the epiphyseal separation must be looked for and treated, preferably by an orthorpedist, since injuries involving the epiphyseal line frequently lead to growth defects in the involved bone. X-rays of the other extremity are useful in the diagnosis of epiphyseal injuries.

Examination of an injured extremity should always include tests of artery and nerve continuity. Open fractures require immediate surgical treatment.

Colles' Fracture (Figures 1 through 7) is a fracture of the distal inch and a half of the radius, often associated with a fracture of the ulnar styloid. A "silver-fork" deformity is commonly seen, due to the dorsal angulation of the distal fragment. It is produced by sudden force transmitted through the hyper-extended hand.

Reduction is carried out best under

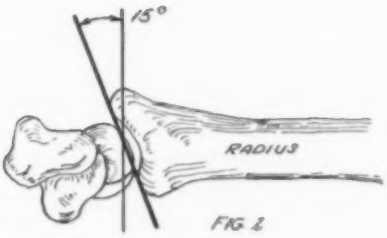


FIG. 1

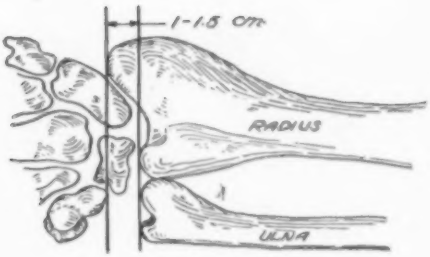


FIG. 2

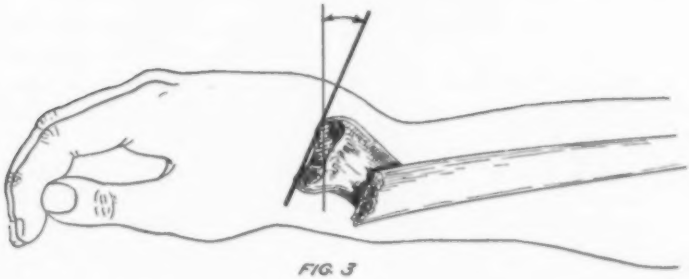


FIG. 3

COLLES' FRACTURE (LATERAL VIEW) SHOWING THE "SILVER-FORK DEFORMITY," AND THE ARTICULAR SURFACE OF THE RADIUS ANGULATED DORSALWARD.

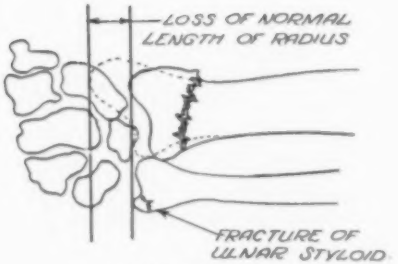


FIG. 4

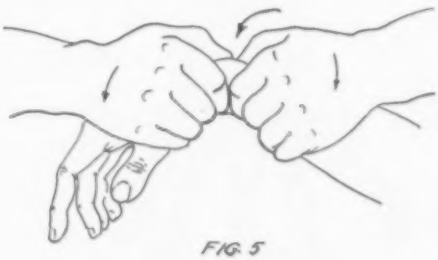


FIG. 5

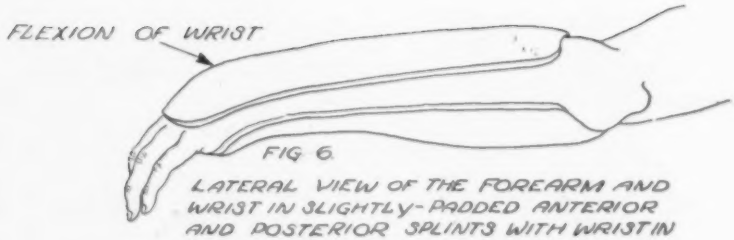


FIG. 6.

LATERAL VIEW OF THE FOREARM AND WRIST IN SLIGHTLY-PADDED ANTERIOR AND POSTERIOR SPLINTS WITH WRIST IN PARTIAL FLEXION. THE FOREARM IS PLACED IN NEUTRAL POSITION, HALF WAY BETWEEN FULL SUPINATION AND FULL PRONATION.

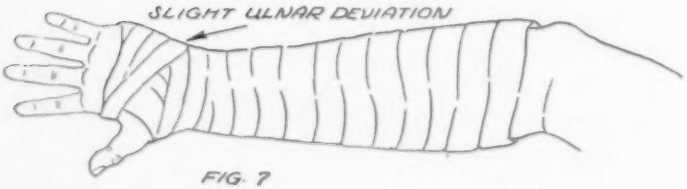


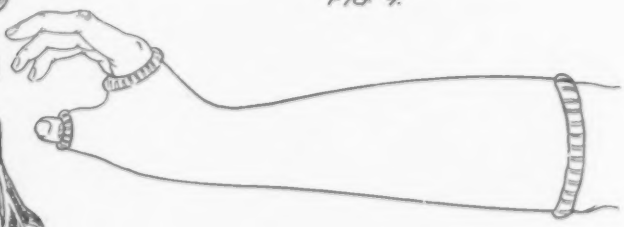
FIG. 7



FIG. 8

FRACTURE OF SCAPHOID

FIG. 9.



CAST FOR IMMOBILIZATION OF FRACTURE OF CARPAL SCAPHOID

general anesthesia (essential in children), but can be done within a few hours after injury under local anesthesia, by injecting 10-15 cc. of 2% procaine into the hematoma at the fracture site, and waiting about ten minutes for this to take effect. While an assistant applies counter-traction to the forearm, the operator grasps the hand as though he were "shaking hands," and exerts steady, strong, slow pull until the fragments are disimpacted. The operator then grasps the wrist as shown in Figure 5 and forces the distal fragment distalward and palmarward. Immobilization is then maintained with the wrist in flexion and slight ulnar deviation, by means of molded plaster-of-paris "sugar-tongs," or anterior and posterior splints (shown in Figures 6 and 7).

The arm should be elevated in a sling for two to three days to prevent swelling. Circulation in the fingers should be checked. X-rays should be taken at frequent intervals so that any slipping can be corrected as soon as possible. Immobilization should be continued for four to six weeks, at the end of which time union is usually solid both clinically and by x-ray. The ulnar styloid frequently does not unite, but is usually asymptomatic.

Badly cominuted or displaced fractures and those that can not be placed in optimal position with one or two attempts should be referred to a surgeon, since they may need traction for adequate reduction, and not infrequently go on to delayed union.

Smith's Fracture (reversed Colles') is similar to a Colles' fracture except that the distal fragment is angulated volarward instead of dorsalward. It is much less common than the Colles' type and is caused by sudden force transmitted through the hyper-flexed hand. It is treated similarly to a Colles' except that manipulation is performed in the opposite direction, and the wrist is immobilized in slight cock-up position, also for four to six weeks.

Fracture of the Carpal Scaphoid (Navicular) (Figures 8 and 9) is the most common injury of the carpus, and is often not recognized as soon as it should be, being frequently called a "wrist sprain" (a very uncommon injury). Like a Colles' fracture, it is usually produced by sudden force transmitted through the hyper-extended hand. There is usually pain on attempted flexion and extension of the wrist, and swelling and tenderness, most marked over the "anatomical snuffbox" just distal to the radial styloid. A patient with these symptoms and signs should have his wrist x-rayed immediately. If no fracture line is seen, oblique views should be taken. If then no fracture line is seen, the wrist should be immobilized and re-x-rayed in ten days, by which time a fracture line in the scaphoid will usually show up clearly because of resorption of bone at the fracture site. As soon as the diagnosis of fracture of the scaphoid is made, the wrist should be immobilized in a snug fore-arm cast as shown in Figure 9, with the forearm in neutral position, and the thumb immobilized as far as the distal interphalangeal joint. Immobilization should be continued for at least eight to twelve weeks, or until union is solid clinically (no tenderness or pain on movement) and by x-ray (fracture line obliterated).

Because in one-third of individuals the blood supply of the scaphoid enters the distal part of the bone only, fractures across the waist of the bone and

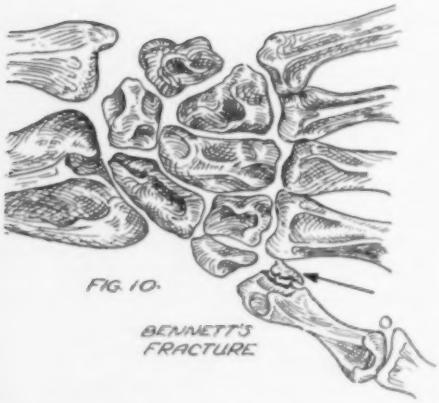
across the proximal part are not uncommonly followed by death (aseptic necrosis) of the proximal fragment, especially if the fracture is not recognized and treated immediately after injury.

Old untreated fractures of the scaphoid with non-union and aseptic necrosis are best handled by the orthopedist, and require prolonged immobilization, and at times excision of the dead fragment or wrist fusion, neither of which is to be undertaken lightly. The best treatment of non-union of the scaphoid is prevention by early and adequate immobilization.

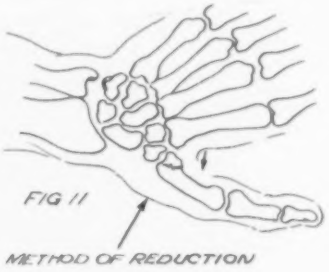
Dislocation of the Lunate is a rather uncommon injury produced by sudden hyperextension of the wrist, and can usually be reduced under anesthesia by traction and hyperextension. Immobilization is effected with a circular plaster gauntlet with the wrist in the position of function, and is continued for six to eight weeks.

Other injuries to the carpal bones are unusual and result from crushing injuries. Since there is usually little if any displacement, immobilization in the position of function for about six weeks is usually satisfactory for healing.

Bennett's Fracture (Figure 10) of the base of the thumb metacarpal is the most common fracture of this bone. It is usually produced by a blow on the long axis or on the dorsum of the thumb. There is swelling and acute tenderness over the proximal end of the bone and a distinct deformity due to the dorsolateral dislocation. Reduction is accom-



BENNETT'S FRACTURE OF THE BASE OF THE FIRST (THUMB) METACARPAL WITH SLIGHT DISPLACEMENT.





IMMOBILIZATION OF BENNETT'S FRACTURE IN GAUNTLET CAST WITH THUMB IN FULL ABDUCTION.

FIG. 13





FIG. 14 a.
FRACTURE OF THE NECK OF THE METACARPAL, SHOWING ANGULATION DUE TO PULL OF THE INTEROSSEOUS MUSCLE.

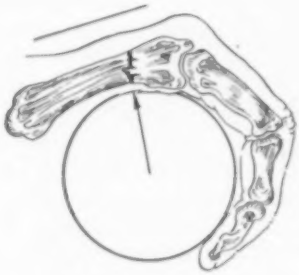


FIG. 14 b.



FIG. 15 a.

FRACTURE OF PROXIMAL PHALANX, SHOWING DEFORMITY PRODUCED BY THE PULL OF THE INTEROSSEOUS AND LUMBRICAL MUSCLES.

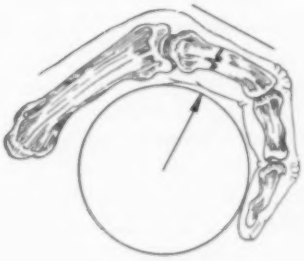


FIG. 15 b.



FIG. 16 a.
FRACTURE OF MIDDLE PHALANX, SHOWING ANGULATION DUE TO PULL OF THE FLEXOR SUBLIMIS TENDON.

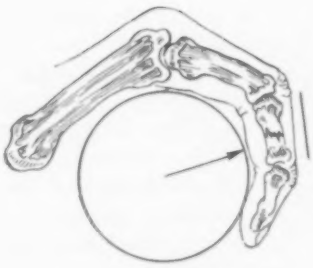


FIG. 16 b.

plished under local anesthesia by first exerting traction on the thumb and then pressing the prominent proximal end of the bone down into place while the distal end is brought outward into full abduction (Figure 11). Position is held by means of an un-padded snug plaster gauntlet as shown in Figure 12. If the position is not perfect on the post-reduction x-rays, the cast should be removed and manipulation repeated. Failure to maintain reduction is an indication for continuous traction. Immobilization should be maintained for three or four weeks with frequent x-rays to check position.

Other fractures of the thumb should be treated by manipulative reduction and casting as above, or by traction if this is not satisfactory.

Fractures of the Second to Fifth Metacarpals are usually produced by the impact of the knuckles of the clenched fist against a hard surface, and usually involve the neck of the bone as shown in Figure 14a. The distal end (head) is flexed toward the palm by the pull of the interosseus muscle and presents as a prominence in the palm, which gives pain on attempted grasp. This may be reduced under local anesthesia, by means of a strong force applied to the head of the bone to force it dorsal-ward. The hand should be immobilized with the involved finger flexed in position of function over a metal splint or gauze roll (Figure 14b), incorporated in a plaster gauntlet, in such a way as to maintain pressure upward on the distal fragment, and downward pressure on the proximal fragment. The cast should allow full motion of the other fingers.

Fractures of the shafts of the metacarpals are frequently oblique and have a tendency to slip. If they cannot be satisfactorily reduced and held by the above method, traction or internal fixation may be required, but should be undertaken only by experienced hands.

Immobilization of metacarpal fractures should be continued for three to four weeks, at the end of which time active motion should be begun. Even though the x-ray does not appear to show bony union at that time, the fibrous union is usually sufficient to hold the reduction until bony union is complete.

Fractures of the Phalanges are the commonest fractures encountered, and usually result from direct trauma. Because of the intimate relationship between the bones and tendons in the phalanges, accurate reduction is essential to prevent even minor displacements that may freeze or distort tendon movement. Transverse fractures can frequently be reduced by direct manipulation, but skeletal traction is usually necessary to properly reduce oblique or comminuted fractures.

A palmar metal or plaster splint or gauze roll (Figures 15b and 16b), held on by adhesive tape or plaster, can be used to immobilize the finger after reduction.

The proximal and middle phalanges should be immobilized in flexion (Figures 15b and 16b), 30-45° at the metacarpophalangeal joint, and 45° at the distal joint. Phalanges should not be splinted in extension because they rapidly become stiff in this position, and full use is delayed after immobilization is completed.

Clinical healing is usually solid enough to permit active use at the end of the third week even though bony union is not seen by x-ray.

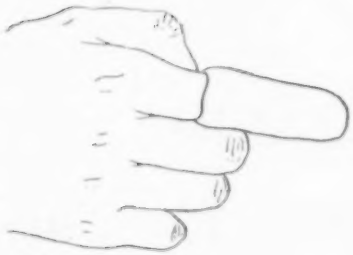


FIG. 17

PLASTER THIMBLE FOR IMMOBILIZATION OF FRACTURES OF TERMINAL PHALANX.

DIRECTION OF FORCE TO BE USED FOR REDUCTION.

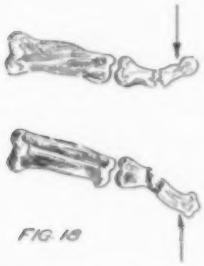


FIG. 18

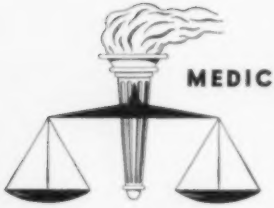
FRACTURES OF THE TERMINAL PHALANX SHOWING SLIGHT ANGULATION DORSALWARD AND PALMERWARD.

Fracture of the terminal phalanx (Figure 17) is usually caused by a crushing injury or by a blow on the end of the extended finger. It can be treated satisfactorily by molding it into anatomical position, and immobilizing it in a plaster thimble (Figure 18) for 3 to 4 weeks.

After-Care of fractures of the hand and wrist and fingers consists primarily of active exercise of all components starting as soon as the immobilization is discontinued. (All parts that can safely be left out of the cast should be exercised all during the period of immobilization.) Clinical union is more important than x-ray union in finger and metacarpal fractures, whereas bony union as seen by x-ray is essential in fractures of the distal radius and the carpus, as a guide to the required duration of immobilization. Passive exercise is dangerous and should not be used. Warm soaks two or three times a day make joints more supple and aid active motion.

Careful attention to accurate anatomical reduction, adequate immobilization, and supervised "after-care" will give the patient full use of the injured extremity in most cases within one or two weeks of the time immobilization is discontinued, and will prevent the deformities, stiffness and pain of mismanaged fractures that are so distressing to both patient and physician.

This article will be continued in next month's issue with a discussion of fractures of the metacarpals and phalanges.



MEDICAL JURISPRUDENCE

THE NURSE *and The Law*

GEORGE ALEXANDER FRIEDMAN, M.D., LL.B., LL.M.
New York, New York

Statutes exist in all states for the registration of professional trained nurses, prescribing the conditions and qualifications for registration. Many states, including New York, regulate the licensing of practical nurses. Non-licensed persons may attend the sick for hire but may not hold themselves out as licensed nurses.

Defendant hospital falsely represented that it was accredited under the laws of the state to train nurses, and that a person who worked in the hospital for a certain term of years would be entitled to examination by state examiners to enable her to become a registered trained nurse. Upon these misrepresentations plaintiff was induced to train in the hospital. Plaintiff's cause of action for fraud against the hospital was upheld by the court.[1]

The nurse must not perform any acts which constitute the practice of medicine. The exception to this rule is that of an emergency. The scope of a nurse's function is greater when acting under instructions of a physician than otherwise.

Defendant was convicted of the illegal practice of medicine.[2] She represented she was a practical nurse, and set up headquarters in a bar and grill. She then injected over 500 persons with water, professing it to be a vaccine serum which would immunize them against smallpox.

Many statutes specifically permit registered nurses who have qualified themselves by a special course of study to administer anesthetics under the direction and in the presence of a physician. In other jurisdictions it has been held by the courts that the instruction of the physician prevents the act from being characterized by the law as the practice of medicine.

LIABILITY OF THE NURSE FOR NEGLIGENCE

In the performance of her duties a nurse is required to exercise reasonable

or ordinary care to see that no unnecessary harm comes to her patient. She is legally responsible for her own acts. In some cases she may share her responsibility with others. Cases draw no distinction between the liability of registered nurses or student or practical nurses, licensed or not.

For the most part cases do not distinguish between mal-practice and negligence of a nurse. In one case, however, a nurse was sued for her negligent acts and the question before the court was which Statute of Limitations was applicable: the two year statute for malpractice or the three year statute on negligence. The court held that malpractice was a term applying to a physician, not a nurse.[3]

The standard of care owed a patient and whether that standard was violated is most often a question for the jury just as in cases against physicians. The same is true of proximate cause: was the act of the nurse the cause of the injury?

All these issues arose in *Cooper* v. *National Motor Bearing Co., et al.*[4] The nurse was employed by the company to run a first-aid station for employees. Plaintiff, an employee, received a puncture wound on his forehead when another employee let a piece of metal slip from his hand. He went to the nurse for treatment. She did not probe the wound or examine it but merely applied antiseptic and bandaged it. For some three or four months plaintiff returned to defendant nurse for treatment. He finally requested that she send him to the company physician who removed a basal cell carcinoma.

A verdict of $15,000 was returned against the nurse and the Company. The Court held that the standard of good nursing care in the community required the nurse to probe the wound for a foreign object. The delay in sending defendant to a physician when she saw the wound failing to heal properly was similarly negligent. There was sufficient evidence also as to proximate cause.

Assisting in an Operation A hospital nurse gave the physician formalin instead of the novocain which he requested as an anesthetic for an operation involving removal of a cyst in pelvic region. Pain accompanying treatment lasted for a period of three months, and a scar resulted which interfered with marital relations. A verdict of $7500 was recovered against the nurse. The hospital was not liable since it was a charitable institution, and the surgeon was not liable since the nurse was an employee of the hospital, not of the surgeon.[5]

Death resulted from a laparatomy sponge being left in the deceased's abdomen during a Caesarean operation. The charges against the student nurse were dismissed. She was in charge of counting the unused sponges and handing them to the surgeon. The hospital was not liable because it was a charitable institution. The Supervising Nurse was in charge of counting the used sponges. She reported the sponge count correct before the incision was closed. The jury brought in a judgment of $10,000 against the surgeon and the Supervising Nurse. The surgeon settled with plaintiff for $4500 and on appeal the Court held the Nurse was liable for the rest of the judgment.[6]

The case against a nurse was dismissed in *Leonard* v. *Watsonville Community Hospital.*[7] The nurse assisted in an operation in which a clamp was left

in patient's abdomen. There was no evidence that it was the nurse's duty to make an instrument count.

Nurse X assisting at an operation was allegedly negligent in leaving a swab in plaintiff's abdomen after a surgical operation on him. Plaintiff sued, among others, the supervising nurse of the hospital who had assigned Nurse X to the surgeon. *Held:* The doctrine of *respondeat superior* does not apply to the relationship between a supervisor and his subordinate employees. Financial responsibility is shifted from the supervisor who exercises immediate control to the employer.[7a]

Suicide of Patient Patient who was in a mental institution leaped to his death from the seventh floor window of a doctor's office to which he had been taken for x-rays. The negligence of the attendant who had accompanied him to the doctor's office, as well as that of the sanitorium, was a question for the jury.[8]

Private Nurse A special nurse was employed by plaintiff to take care of her in the hospital. The nurse was not negligent in failing to examine a proctoclysis set furnished by the hospital.[9]

Acting Under Direction of Doctor A nurse acting under the direction of a physician is not liable for his malpractice. It is the duty of the nurse to "obey and diligently execute the orders of the physician in charge of the patient, unless of course such order was so obviously negligent as to lead any reasonable person to anticipate that substantial injury would result to the patient from the execution of such order or performance of such direction."[10]

The physician placed patient in a sweat cabinet. He was present at all times and instructed the nurse as to the wrapping or covering of patient. Patient was severely burned. *Held:* the nurse was not liable. She could assume the treatment of physician was proper.[11]



A defendant nurse improperly operated a diathermy machine as a result of which plaintiff was severely burned. Plaintiff called to nurse's attention the fact that the machine was too hot. Nurse did not turn down the current although she pretended to do so. The Court held the nurse was not relieved from responsibility simply because she was acting under the direction of defendant doctor in whose office she worked. The nurse also owed a duty to patient and she was conscious of the consequences which would follow from applying too much heat or failing to reduce the current or discontinue treatment.[12]

Privileged Communications In some states statutes have been enacted expressly making communications between nurse and patient privileged from disclosure in courts of justice.

In New York the privilege is limited to professional or registered nurses, and is further limited to those communications necessary to enable the nurses to

act in their professional capacity.[13] So a visiting nurse was permitted to testify that the deceased was mentally alert at all times; that his memory was good; that he took an interest in his farm and farm prices; and that he related to the nurse stories of his farm and neighbors. The witness testified only to what she observed. Nothing which had been said to her by decedent was communicated to nurse to enable her to act in her professional capacity.[14]

Most states have statutes which specify that the privilege belongs to physicians. They do not specifically mention nurses. Jurisdictions are divided whether these statutes should be construed to include nurses. Those states which include nurses within the privilege do so to prevent the privilege from being thwarted:

> "It is often necessary for those who assist the doctor as a nurse . . . to be present at conversations between the patient and doctor, and little good would be subserved, if the lips of the doctor could be sealed by statute as to conversations, but the nurse or attendant might testify to all that was said and everything that was done. The purpose of the law was to protect the right of privacy . . . its very intention might be thwarted by the admission (of the nurse's evidence as testimony)."[15]

The privilege in these jurisdictions is limited to nurses acting as assistant or agent of the doctor and not as an independent person.

Interference with Practice of Nurse A physician on the staff of a hospital claimed that a graduate nurse had disparaged him to his patients. He caused the superintendent of the hospital to take the nurse's name off the registry by threatening to discontinue sending his patients to the hospital. The nurse sued the doctor. There was no evidence at the trial other than the testimony of the doctor as to the derogatory remarks. The nurse denied she made them. It was agreed by all that for a nurse to criticize a doctor to his patient would be a breach of ethics. The jury found for the nurse. Interference with business relationships and livelihood of a nurse unjustifiably is actionable.[16]

Workmen's Compensation In many jurisdictions hospital or industry nurses are covered by Workmen's Compensation either by statute or because the employer voluntarily elects to be bound by the statute. In order to be covered the nurse must be an employee, not an independent contractor, and the accident or injury must arise out of the scope of the employment.

A professional nurse was assigned by the hospital to a patient at patient's and physician's request. Her name was taken from a list of nurses kept by the hospital. "There was no agreement or understanding as to the nature of her duties or the right to control her services. Her hours of employment and the wages she was to receive were covered by an operating schedule maintained between the hospital and the nurses' association."[17] After a week, nurse's finger became infected and she sued patient for compensation under the Workmen's Compensation Act. *Held:* nurse was an independent contractor, and not an employee of patient. "The judgment of the nurse must frequently be contrary to the wishes of the patient, and in the exercise of their independent calling, it is their undisputed right to follow their own judgment without interference on the part of the patient."[18]

The right to control the work of the nurse was not reserved to the patient.

Nurse was employed by a city hospital. His salary was $110 a month plus three meals a day, including days when he was off duty. On a day when nurse was off duty he returned to the hospital for dinner. He slipped and fell on the stairs and was injured. *Held:* compensateable injury. His presence on the premises was associated with his employment.[19]

Insurance Nurse was insured by an accident policy which provided coverage against "bodily injury sustained through accidental means and resulting in disability, dismemberment, loss of sight, or death." The policy further stated that "blood poisoning resulting from a bodily injury shall be deemed to be included in said term."

While attending a patient who had blood poisoning the nurse contracted the disease and died. *Held:* the beneficiary under the policy could recover. Death was by bodily injury sustained through accidental means.[20]



Damages for Wrongful Death or Disfigurement of Nurse Husband received $36,566.17 damages for the death of his thirty-eight year old wife. The wife had a life expectancy of 28.96 years. Her 40 year old husband had an expectancy of 27.61 years. The parties had been happily married for ten years. Decedent was a college graduate and registered nurse who had worked for two years after her marriage and again after her husband entered the navy, earning $75-$80 a week. During their marriage the couple had built up a capital of $15,000. The husband testified that he had left financial matters largely if not entirely, to his wife since she was better manager than he.[21]

$8600 was awarded to a registered nurse's estate. She was 33 years old and in good health at the time of her death and earning $155 a month.[22]

A physician was awarded $7000 for the death of his wife. He had a life expectancy of 27.45 years. His wife, apart from housekeeping for her husband, did practical nursing, and acted as his receptionist and stenographer, looking after the books and receiving patients. Although the husband remarried eleven months after his wife's death his second wife performed none of these extra services.[23]

An award of $7000 was made to a 77 year old husband. His 73 year old wife was a practical nurse who took care of her husband, who was in bad health, and in addition performed outside duties, baby sitting and earning $5 to $6 a week.[24]

Plaintiff, a registered nurse 26 years of age, sustained serious injuries in an automobile accident. Numerous per-

manent and disfiguring scars resulted on her face and neck. She went back to work but was nervous, tired and got dizzy spells. The trial court said:

"The disfiguring scars on plaintiff's face are permanent injuries. Plaintiff is a young unmarried woman who would be very much more attractive without the scars. Such scars are a liability to one in the nursing profession in addition to the embarrassment and other factors (that) would result to one where appearance was not so directly involved in her work."[25]

The court upheld a verdict of $15,740.

Summary

1. Registered nurses must be licensed in all states. Some states also regulate the licensing of practical nurses.

2. A nurse must not practice acts which constitute the practice of medicine, except in case of emergency. There is greater flexibility in acts a nurse may perform under orders of a physician than there is when she is acting independently.

3. Many jurisidictions have statutes permitting specially qualified registered nurses to administer anesthesia under a physician's direction and in his presence. In other states the same result has been achieved by case law.

4. A nurse must exercise reasonable or ordinary care in caring for a patient. She is at all times legally responsible for her acts.

5. Malpractice is a term applied to the doctor, not the nurse. The nurse is liable to patients under ordinary rules of negligence.

6. An important part of a nurse's duty is to know when the services of a physician are required.

7. A supervisory nurse in a hospital is not liable for the acts of a subordinate whom she assigns to duty.

8. It is the duty of the nurse to execute doctor's orders. She must assume the doctor knows what he is doing, and is not responsible for his treatment.

9. But a nurse is not relieved of responsibility simply because she works for a doctor. A nurse was held liable for burning a patient by the improper use of a diathermy machine. She knew the consequences of applying too much heat.

10. Some jurisdictions include the nurse in their privileged communications statutes. Others achieve the same result by court decision construing statutes which limit the privilege to the physician to include the nurse. Other jurisdictions exclude the nurse from the privilege.

11. Statutes which prohibit nurses from disclosing confidential communications made to them by patients limit the privilege to registered nurses and to communications made to enable the nurse to carry out her duties.

12. Court decisions which construe statutes limiting the privilege to physicians to include nurses, include only nurses acting as assistants or agents of a doctor, and not nurses acting independently.

13. It is a breach of ethics for a nurse to criticize a doctor to his patient.

14. Unjustifiable interference by a physician with the livelihood and

business relationships of a nurse is legally actionable.

15. A physician who caused a nurse to be taken off the nurses' registry as a result of which she was unable to get jobs at hospitals in the city was liable to her in damages. Although the physician claimed the nurse made disparaging remarks about him to his patients, the nurse denied that she made them, and no proof of these remarks was presented at the trial.

16. In many jurisdictions nurses are covered by workmen's compensation either by statute or by voluntary election of the employer. To be covered the nurse must be an employee, not an independent contractor; and the injury or disease must arise out of the scope of employment.

17. Death of a nurse from blood poisoning caused by infection while nursing a patient, despite use of all proper nursing methods, has been held to be death by accidental means within accident insurance policies.

18. The following factors are taken into consideration by the court in determining the amount of damages to be awarded for the wrongful death of a nurse: health of deceased; age and life expectancy; salary earned; services rendered to party entitled to damages; and where the husband is alive and entitled to damages, his life expectancy.

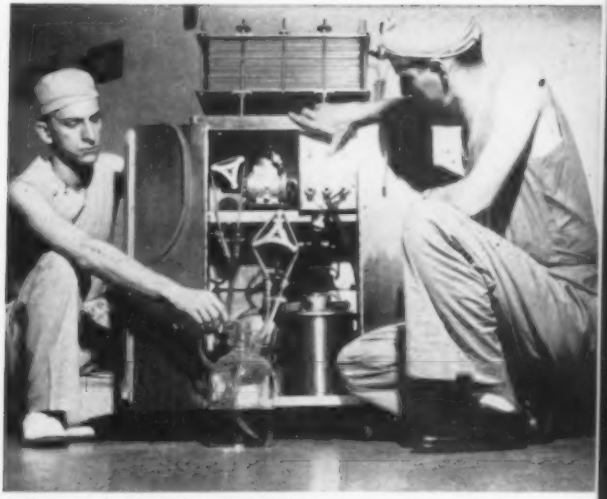
19. In cases of disfigurement and injury factors considered in awarding damages are occupation, pain and suffering and embarrassment, age, health, type of injury; permanent or temporary, disabling or otherwise.

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133 E. 58th Street

Akron City Hospital



Urology residents ready artificial kidney.

In its 65th year, this private, nonprofit hospital consists of 8 modern buildings with 565 beds.

Although its name implies city ownership and administration, Akron City is not a municipally run institution. Instead, it is a private, nonprofit hospital of 565 beds in 8 modern buildings located little more than a mile from the heart of downtown Akron.

In its 65th year, Akron City consists of 8 modern buildings on 14 acres of ground. Some 18,000 in-patients are cared for yearly, while 24,000 patients receive medical care through the hospital's busy emergency room and outpatient departments.

History The hospital was built by contributions from many sources. A French-speaking immigrant, Boniface DeRoo, was the first contributor, thus becoming the founding father of the hospital. Following augmentation of this original contribution by Thomas W. Cornell and Ohio C. Barber, the project was launched.

The brick mansion of Dr. S. W. Bartges was purchased, and in it on October 11, 1892, was opened Akron's first general hospital. The growth of the hospital since its founding is a result of greater patient needs, stemming from advances in medical science and from a growing population.

Medical staff The medical staff of Akron City Hospital is composed of 121 staff physicians, 425 privilege staff members, 42 residents and 24 interns among the following services: general surgery, medicine, orthopedics, thoracic surgery,

genitourinary surgery, obstetrics and gynecology, radiology, pathology and general practice.

Staff emphasis is on care of the patient, graduate medical education and medical research in the clinical and basic sciences.

The hospital employs about 320 registered nurses and maintains a three-year nursing school which graduates 40-50 registered nurses annually.

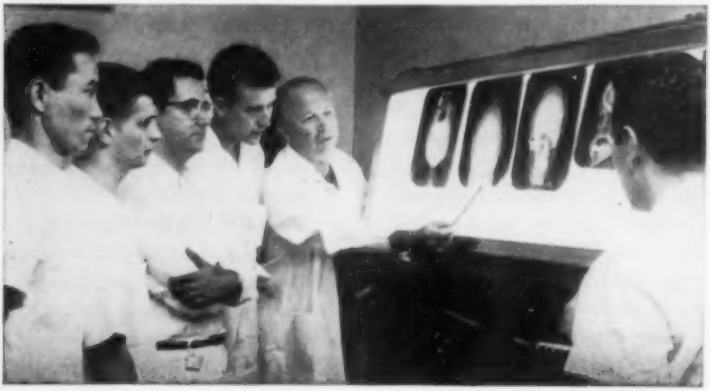
Internship Internships at Akron City Hospital are rotating. A quota of 24 interns allows for about 25 beds per intern. (Akron City has the distinction of having secured its full quota of 24 interns for the past 5 years — the only hospital in the State of Ohio to accomplish this.) Intern appointments are made in conjunction with the National Intern Matching Program.

The intern performs his duties under the supervision of his resident and attending physician. The responsibility granted the intern is directly proportional to his judgment and ability. His primary responsibility is for the care of all hospitalized patients. He performs



Patients in Akron City's outpatient clinic are followed by the hospital house staff. Each year the various services of the clinic handle nearly 14,000 patient visits.

X-ray conferences are an important feature of resident training at Akron City Hospital.





Modern library provides staff doctors with nearly 6,000 volumes and 158 periodicals.

all histories and physical examinations, technical procedures such as lumbar punctures and thoracentesis, and participates actively in ward rounds and conferences. The intern also receives valuable training in the outpatient department and emergency room.

This year the hospital initiated a preceptorship program for interns. A staff physician designated as a preceptor is assigned two interns. The preceptor is to function as a mature, experienced advisor by personal contact with the interns assigned to him. The plan is envisaged, not as a training or teaching program, but rather as a means for "tightening" the internship in all its nonprofessional aspects.

Residency Akron City Hospital offers fully accredited board training in seven specialties: medicine, surgery, obstetrics and gynecology, orthopedics, genitourinary, radiology and pathology. A general practice residency is also available for those desiring additional training before entering private practice. Progression of training is through a columnar rather than pyramidal system.

Applications for residency appointments are made to the office of the director of medical education and are processed by the department of the specialty concerned.

The resident supervising the interns assigned to him, and under the direction



of the staff physician, is directly responsible for all patient care. Also, at Akron City Hospital every patient is a teaching patient—regardless of financial arrangement.

The assistant residents and interns each perform their respective duties on the team headed by the resident and directly by the attending physician. All members of the house staff team are called upon to exercise independence of judgment and responsibility commensurate with their experience. In this way the resident is permitted to assume increasing responsibility in the care of patients.

Numerous conferences, rounds and seminars are held throughout the year; attendance and participation in these meetings is required. The basic meetings are the staff conferences, clinical pathological conferences, tumor conferences, and x-ray conferences.

Didactic instruction in the basic sciences is offered at the bedside by staff physicians who have developed special interest and capacities in the application of this special knowledge. This method of bedside teaching correlates the sciences of biochemistry, bacteriology, physiology and pathology with the clinical training of the resident.

Finally, in the training program, an effort is made to encourage and allow a



Photo at left shows the integrated physical plant of ACH consisting of eight modern buildings on fourteen acres.

ACH resident programs include regularly scheduled teaching conferences such as the one pictured here in pathology.





Used primarily to integrate the basic sciences with the clinical experience of the resident, bedside teaching plays an important role in resident training.



Here, resident adjusts cervical traction apparatus for patient on orthopedic ward.



Staff doctors are shown in cardiac surgery employing the pump oxygenator and electronic equipment. Below, scintillation spectrometer used in thyroid uptake study at radioisotope lab.



specified period for pursuing a special interest in research.

Childrens Hospital All interns and the orthopedic and surgical residents of Akron City Hospital rotate through Childrens Hospital for their pediatric training.

The Childrens Hospital of Akron is a 185 bed hospital which is presently building to a capacity of 300 beds, and admits children under the age of 16 years. It is operated separately by its own board of trustees.

Research Research is carried on in



House staff members make good use of the recreational facilities provided by ACH.

the different phases of medicine and in close association with the clinical and didactic activities of the hospital. Residents are assigned to the research laboratory for specified periods during their training.

In the recent past Akron City Hospital has provided for the Akron area, through its research department, facilities for cardiac catheterization, artificial kidney, radioactive isotopes (both diagnostic and therapeutic), cardiac surgery, and preservation of homografts, thereby contributing to better patient care and effecting medical progress in this area.

Outpatient The hospital operates an active outpatient department for medically indigent patients. Clinics in all departments are held throughout the week, except Sunday. An average of 14,000 clinic visits are made each year; senior residents with the assistance of interns and assistant residents conduct the clinics.

An attending physician is assigned to each clinic for consultation and supervision of teaching.

The hospital library is open every day except Saturday and Sunday, and a full-time librarian is in charge. A key is available to the house staff at all times. The library contains 5,575 volumes and receives 158 periodicals.

Opportunities in an Open Staff, Private Hospital

The Akron City Hospital serves the adult population in a Metropolitan area of nearly half a million. It provides every modern and scientific hospital facility for all qualified physicians in the community. It is a private nonprofit institution administered by a Board of Trustees who serve without remuneration, and by an Executive Director. It is not associated with a medical college, and does not have a closed medical staff, thus, the name of the Hospital indicates its field of service to the public and to the profession, but belies the fact that it is a private general hospital with 565 beds. The Medical Staff and the Administrative Board both believe that an important function of the Hospital is to have training programs that will attract the best graduates of the leading medical colleges for their internships and residencies.

The success of an institution such as ours depends upon the close cooperation between the Board of Trustees and the Executive Director and the Medical Staff. Each has a distinct sphere of jurisdiction, yet their respective responsibilities are intertwined. The physicians on our staff are in private practice and include men engaged in every specialty field and in general practice. The medical staff functions in a democratic manner by means of committees that are representative of all departments. The Executive Committee is the direct liaison between the Staff and the Administration and their relations are close and most cooperative.

I believe we have been unusually successful in welding 121 physicians, graduates of 38 different medical colleges, with their various medical backgrounds, into a team. Their greatest concern is for the good of the public, the Hospital, the patients, and the intern and resident training programs. Each staff appointment is made on the basis of the physician's ability, competency, integrity, loyalty, and interest in cooperat-

GUEST EDITORIAL



THEODORE L. BLISS, M.D.
President
Medical Staff
Akron City Hospital

ing to provide the best possible training program for our hospital interns, residents, and nurses.

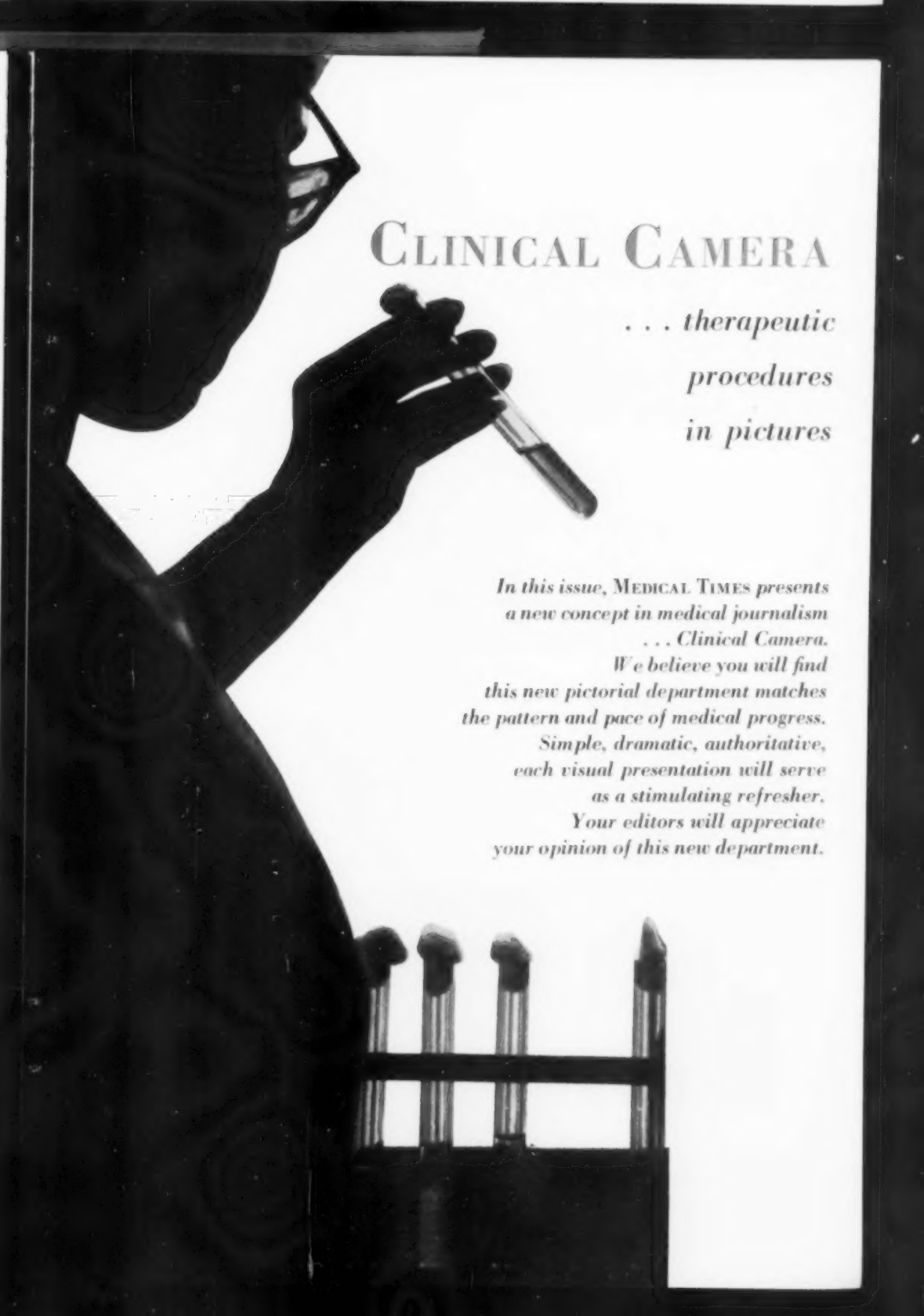
An internship and residency in an open staff, private, general hospital affords the advantage and opportunity of the various and often different viewpoints of many physicians.

I consider it a privilege, honor and responsibility to serve this year as President of the Medical Staff of Akron City Hospital.



WANT A CHUCKLE?
SEE "OFF THE RECORD . . . "

Share a light moment or two with readers who have contributed stories of humorous or unusual happenings in their practice. ***Pages 23a and 27a.***



CLINICAL CAMERA

. . . therapeutic procedures in pictures

In this issue, MEDICAL TIMES *presents a new concept in medical journalism . . . Clinical Camera. We believe you will find this new pictorial department matches the pattern and pace of medical progress. Simple, dramatic, authoritative, each visual presentation will serve as a stimulating refresher. Your editors will appreciate your opinion of this new department.*

CLINICAL CAMERA

. . . *Poliomyelitis: a case report*



MR. MONTY: *"Why didn't you call Dr. Tremaine this morning if Johnny had a temperature and has been vomiting all day? Why did you wait until I got home from work?"*



DR. TREMAINE: *"You say Johnny can't seem to raise his head off the pillow and has been complaining of a stiff neck? I'll be there within the hour."*

Dr. Tremaine examines the patient.





The knee jerks are unequal . . . and the child rather apprehensive. The superficial reflexes are depressed.

DR. TREMAINE: *"You say Johnny only had one Salk injection and that was 10 months ago?"*

MRS. MONTY: *"Yes, there was always some reason for the delay. Either we were going on a trip or Johnny had a cold. Do you think this is polio?"*

DR. TREMAINE: *"I can't be absolutely sure at this time but the presence of a stiff neck, gastrointestinal upset, temperature, and some neurological findings forces me to consider this possibility strongly."*

MR. MONTY: *"Will you have to take him to the hospital?"*

DR. TREMAINE: *"That's the best place for Johnny right now. We have to do some elaborate laboratory tests to confirm our diagnosis, and if I am right, he'll need hospital treatment."*



Clinical Camera



"Dr. Porter, this is Dr. Tremaine. I'm admitting a three year old male with a 24-hour history of gastrointestinal complaints, headache, and temperature. He has a stiff neck and back, unequal knee jerks, and my tentative diagnosis is polio. Would you make arrangements for a spinal tap as soon as possible?"



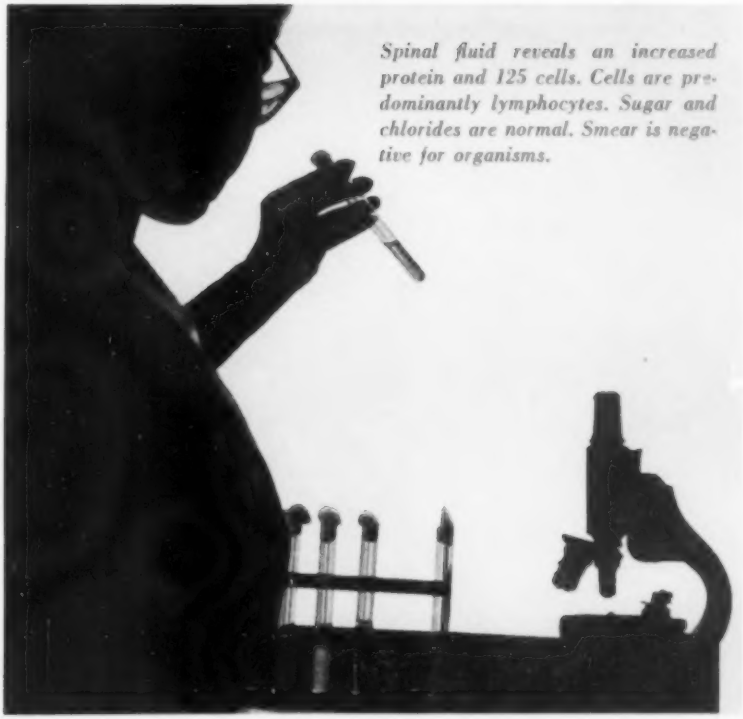
Johnny is transported by ambulance to the hospital.

Further examination in the hospital reveals disturbed reflexes and weakness in the right lower extremity.





A spinal tap is performed as soon as a history and physical examination have been completed.



Spinal fluid reveals an increased protein and 125 cells. Cells are predominantly lymphocytes. Sugar and chlorides are normal. Smear is negative for organisms.



A conference is held by the attending pediatrician, the resident and the intern, relative to the treatment of Johnny. As there is no involvement of the intercostal muscles, or of the respiratory center, for the time being the need for the use of an "iron lung", or for doing a tracheotomy does not seem to be urgent. Supportive therapy, analgesics, moist compresses, steps to prevent contractures and preliminary physiotherapy will be used. When the acute phase is over the pediatrician and the physician from the Department of Rehabilitation, will make an evaluation of any residual paralyses, and steps will be taken to overcome any disabilities.

Dr. Tremaine to nurse:
"The temperature has been flat for 24 hours, and the pain seems to have gone. This makes the sixth day of illness and I feel sure the worst is over."



Clinical Camera



Johnny's strength increases. Properly fitted shoes with cross bars are applied to prevent drop foot and contractures.

As a part of the regimen prescribed, Johnny receives physiotherapy. The muscles are manipulated to keep them in the proper position to avoid contractures.





The temperature curve remains flat, repeat spinal tap is normal. The acute stage is over. Physiotherapy and rehabilitation now begin.

Clinical Camera



Further therapy. Johnny is immersed in a Hubbard tank. This permits active exercise even though the muscles are weak at this stage of the disease.

Under the attentive supervision of the physiotherapist, Johnny accepts this procedure as though it were a game.





Meanwhile, Johnny is taught self-sufficiency in ambulation with a wheelchair. It keeps him busy and also strengthens his upper extremities.



Throughout, Johnny's nutritional needs are adequately taken care of. He is given tender loving care by the nurses on the ward.



At this stage, proper splinting of the extremities with braces helps to maintain an erect posture. With these braces as an additional aid, Johnny is taught how to walk erectly through parallel bars.



Johnny, after a few steps, happily accepts this new "game."



Properly fitted crutches are supplied for support and Johnny is ready to go home.



He leaves the hospital with his parents. Now, home care and further rehabilitation are indicated as a replacement for institutional care.

Clinical Camera

Photographs: Stanley Simmons
N.Y.U. Medical School Staff Photographer

Despite the decreased incidence of poliomyelitis, the individual physician's responsibility for early diagnosis and proper therapy is as great as ever. And since there are a few children and adults who have inadequate or no protection after the Salk vaccine, the general practitioner can expect polio to continue for years to come. The burden of the program for education, vaccination and detection still rests with the family physician.

THE MEN WHO MADE THE MEDICINE . . .

Dr. Abbott: PILLS and PRINCIPLES

Wallace C. Abbott's career, from the time he left his parents' farm until he established himself as a successful physician and business leader, can best be described in two words: operation bootstrap.

He was born October 12, 1857, in Bridgewater, Vermont, an area of wooded hills and mountains. Fields cleared for farming were rocky, demanding sweat and perseverance for small returns. The Abbotts, like other farm families there, were lucky to eke out a living.

Young Abbott grew into a stocky, deep-chested boy who could do a man's work: milk cows, saw wood, lug bags heavy with feed. The life was stern but healthful. Though Abbott knew it was "an honest man's work," he also felt it held little promise for the future.

The boy had an inquiring mind and driving ambition. He not only wanted an education but had a longing to become a doctor. His father thought these desires foolish. Wallace's place was on the farm, and besides, where was the money for an education to come from? Education was for the sons of the rich.

Abbott's mother, who was perhaps closer to the boy, sensed the earnestness of his ambitions and encouraged him in them. She told him he could get an education if he wanted it badly enough.

So it was with his mother's blessing, his father's grudging consent and almost no money that he entered Randolph

PHARMACEUTICAL COMPANY FOUNDERS . . .

. . . pioneers in an industry that has caused a virtual revolution in medical care and research in our time. Here is the fourth in this exclusive series



With a loan, a new suit and unlimited confidence
Dr. Wallace Abbott left his native Vermont
to become a successful practitioner in Chicago.
Recalling a medical school lecture,
he began preparing his own medicines.
Soon he was making them for others . . .



State Normal. His years there and later at St. Johnsbury Academy were years of work and study: he earned a certificate to teach in the public schools.

He lived frugally and added to his income by contracting, along with another student, to saw wood for nearby farmers. Early mornings, evenings after school and Saturdays were occupied in this work. In addition the young scholar organized a student's boarding club, getting his own board free for taking care of the collection of dues, the buying of food and general supervision.

He was a good student. Professor W. F. Rochelieu, one of his instructors, stated that when Abbott entered the State Normal School (the fall of 1877), he was already a thorough scholar and had a fund of common sense which enabled him to apply himself in a practical manner.

West Beckons "Not only in scholarship was he a leader," wrote Rochelieu. "In the student organizations and in those movements having for their purpose the general uplift of the student body, his ability as an organizer and counselor gave him a prominent place. He was always at the front in all good works."

Abbott took his first course in medicine at Dartmouth College in Hanover, New Hampshire, not far from his home. After only a few months, however, he decided to head west. The reason for this decision is not clear — perhaps he felt there was more opportunity for him in the expanding midwest, or perhaps it was just his restless ambition driving him on.

His aim was to continue his medical education, but his choice of school was limited by strained finances. He wrote to a number of colleges asking what they could offer a student who had to work his way through. He received the most encouragement from the University of Michigan, and so left New England for Ann Arbor.

Go Anywhere To provide for his basic needs he found a job as a janitor in one of the university's buildings. This was his austere home for the next two years. He slept in a small room, under a stairs, which he and fellow students fixed up as well as they could, building book shelves, a table and stools. Later, Abbott earned part of his expenses and gained valuable experience by working as a nurse.

He received his M.D. degree in 1885, completing the three-year course in only two years. It was a back-breaking experience even for this energetic son of New England. "I do not recommend others to do it," he said.

He went to one of his professors, Dr. Victor C. Vaughan, whom he greatly admired, and asked his advice as to where he should locate a practice — in the city or the country.

"Go anywhere, Abbott," said Dr. Vaughan. "You will succeed wherever you go."

As Usual Abbott was broke as usual, but so used to it by this time that it caused him little anxiety. He felt that all he needed was the proper opportunity and he would establish himself on the black side of the ledger.

He returned to Vermont where he located with an old doctor who wanted him to become his partner and ultimate



Dr. Abbott and his original staff are shown with him on the steps of his home. This is where Abbott Laboratories got their start.

successor. But Abbott could not forget the midwest which to him seemed a land of wide horizons, vigor and enterprise—a young man's country. After only a few months in his home state he bade the old doctor goodbye and headed for Illinois. His destination was Ravenswood, a suburb of Chicago, where he had learned of a physician who wanted to sell his practice and retire. With borrowed capital, a new suit and a plug hat, Abbott set himself up as the new GP in Ravenswood.

Time of Change This was in 1885, a time when Chicago was assuming its role as industrial and commercial center of the midwest. The city was growing at a tremendous rate. In 1880 its population had passed the half-million mark; in 1890 it would go over one million.

But growth rarely is a smooth and painless process. With the rapid development of industry, Chicago was the scene during the '80s and '90s of dramatic labor upheavals. In 1886 the city was rocked by the bloody Haymarket riot, and in 1894, federal troops were called in during the Pullman strike.

At the same time the city developed rapidly as a cultural and educational

center. In 1893 it gained international attention with its World's Columbian Exposition, a world's fair in celebration of the discovery of America.

Strikes, violence, expansion, growth. Young Dr. Abbott could hardly have found a more lively environment. It did not take him long to prove himself a good doctor, and within a year's time he had wiped out his debt and become a married man.

Four Lectures His quick success in his practice was due to his forceful personality as much as his skill. Though young and inexperienced, he impressed his patients as a man who knew exactly what he was doing.

As his practice grew so did his dissatisfaction with the ill-tasting and often undependable water or alcohol drug extracts in use at the time. There was, he felt, some better way of preparing and administering these remedies.

In the back of his mind was a series of lectures at the University of Michigan by his former teacher, Professor Vaughan, on "Four Remedies and Their Active Principles." These remedies were nux vomica, digitalis, aconite and opium. In later years Dr. Abbott often said that these lectures were of more value to him than anything else presented to him in his medical course.

As a general practitioner, he gave a lot of thought to these drugs and their application. He became convinced that the use of the active principles was the solution to the problem of drug uncertainty.

Dosimetrists About this time, news

In the early 1900s the Abbott Alkaloidal Company showed signs of real expansion. The company's growing office staff worked in a frame house, adjacent to the pharmaceutical plant.



of the French school of dosimetrists founded by Dr. Burggraeve began filtering into U. S. medical circles. Burggraeve was a surgeon who, after 40 years of practice, had turned his interest to clinical experimentation and medical theory. His ideas had brought him into conflict with the medical fraternity in his native Belgium, and so he had gone to France.

At the close of the Franco-German war in 1871 he became associated with a retired chemist and pharmacist, M. Charles Chanteaud, who helped him in developing alkaloido-therapy, or active principle medication.

Burggraeve advocated the use of only the minute effective fraction (active principle) of drug plants instead of their water or alcohol extracts, as was the practice. This active fraction could be compressed into a tiny granule or pill, which was a precise dose as well as easy for the patient to take.

Small Supplier Abbott, it is thought, was one of the first American physicians to appreciate the value of Dr. Burggraeve's method and the effectiveness of alkaloidal medicines. When he learned of a small American concern which was producing dosimetric remedies, he obtained some for use in his practice.

But he ran into trouble with his supplier. Not only was the doctor unable to get medicines when he needed them, but he became convinced that some of the supplier's business methods were not ethical. Claiming he had not been treated "on the square," Abbott told the manufacturer in a stormy exchange that he would "see him in South Chicago" before he bought another pill from him.

In Business Though he didn't know it, the drug supplier had become a benefactor of humanity. For that same afternoon in 1888, Abbott, still fuming, decided he would make his own medicines; he stormed up to his attic and began to prepare his "laboratory."

Thus began Abbott Laboratories.

The doctor found the granules he produced to be far more dependable than extracts; also, his patients liked them because they were pleasant to take and convenient to carry. Abbott, pleased with these results, began to offer his medicinals to fellow practitioners. His first outlay for advertising was 25c for four lines in the *Medical World*. It brought $8 worth of orders, which definitely put him in business.

With a busy practice on his hands, the doctor could spare little time for pill making. It was not long before he had to hire girls to do the actual processing. The business grew, necessitating moving it to an old frame house near his home. In time this house, even though it had been expanded, gave way to several larger buildings.

Failures, Too For a number of years the business was conducted under the doctor's own name, but in 1900 it was incorporated as the Abbott Alkaloidal Company. The name was changed in 1914 to Abbott Laboratories, and in 1921 the first building was started at the company's present site in North Chicago.

Like its energetic founder, the company was quick to make use of new discoveries in its field. When biological preparations were developed, the company began to produce them. It started

to make definite chemicals, beginning with the sulfo-carbolates, and during World War I assumed a prominent place in the manufacture of synthetic chemicals.

The history of the company, however, is not simply a record of success following upon success. There were failures, too. Serious money losses through poor investments, bank failures, and buildings ruined by fire, all hit the young company hard. But Dr. Abbott proved himself equal to these misfortunes.

"More Smoke" "Back up and try again," was the way Abbott would put it when operations ran into a snag. He was in the habit of personally checking the flow of work, popping up in a lab one day, the shipping room the next. When he felt a push was needed, he wasn't afraid of speaking his mind. Employees knew exactly what he meant when he said, "I want more smoke," or when he circulated a note reading: "Everybody get busy—The Doctor."

Notes from him to his employees, to those in low position as well as executives, were a common occurrence. Many of these found their way out of his "memory rester," a small black notebook that he carried with him at all times. He could be seen penciling in reminders and observations almost any time of day; many of these notes later were put into practical use in his business or practice.

A Good Boss Though he seemed to be always on the go, he rarely was too busy to confer quietly with his workers. Those who remember him well characterize him as a boss who was genuinely interested in the welfare of his employees. He expected a "square deal" from them, and in return was generous and considerate. Abbott's attitude bred loyalty and cooperation, and many a



Photos taken around the turn of the century show Abbott's processing room, and the finishing department (far right), where granules were bottled, labeled and packed for shipment.

visitor to the plant came away impressed by the spirit of friendliness among the workers.

For some years Abbott carried on his practice while heading the laboratories, yet put in as much or more time than any of his workers. "Do it now!" stated a sign he kept on his desk. If ever a man didn't need such a reminder, it was Dr. Abbott, who appeared able to do three things simultaneously.

Publisher Abbott's role as a manufacturer led him into another field, publishing. Back in 1894, when he first started his laboratory, he found that the "active principle" theory was not generally understood by physicians. If his laboratory was to stay in business, he realized, he would have to conduct an educational campaign among doctors.

The result was the establishment of a medical journal called *The Alkaloidal Clinic*, a name later changed to *The American Journal of Clinical Medicine*. It was successful almost immediately and became a widely read medical monthly.

In addition to being a GP and a pharmaceutical manufacturer, the doctor now found that he was an editor and writer as well.

He applied himself with characteristic zeal and turned out prodigious amounts of copy.

His writings mirror the practices and knowledge of the American physician before the turn of the century.

"Clean Out . . ." Dr. Abbott reminded his readers to "clean out, clean up and keep clean," and advised them "not (to) treat 'named diseases.' Diagnose closely, and meet underlying pathological conditions with the right remedy in a positive, active form and in small dose, repeated at intervals to effect — remedial or physiological."

His knack for getting a message across concisely is evident in a paragraph such



as this: "Essential success points in the treatment of the sick: Equalize the circulation, eliminate waste, stop autoxemia, maintain systematic asepsis, stimulate innervation, and feed the tissues."

His forcefulness and directness were such dominant traits that they created a larger than life impression. "I thought you were a big tall fellow," was a common reaction of many upon meeting him for the first time.

Dr. Abbott died in 1921, at the age of 64, but the growth of his laboratories continued. In 1922, Dermatological Research Laboratories of Philadelphia was purchased; and in 1928, John T. Milliken and Co. of St. Louis; its production facilities were transferred to North Chicago, adding to the growing line of products for the druggist and physician. The Swan-Myers Company of Indianapolis was acquired in 1930.

Memorials Dr. Abbott's widow followed him in death after two and one-half years. In her will were provisions fulfilling the often expressed desires of the doctor and herself.

For those who were closest to him, the employees of his company, a foundation was established with shares of Abbott stock. Called The Abbott Foundation, its purpose was to provide financial aid to any Abbott employee in case of unusual need. Through the years its earnings have quietly relieved the financial distress of serious illness or other misfortune of hundreds, and has provided educational assistance for children of employees.

Students always found inspiration in the doctor, especially those in the field of his life's work—medicine. At Northwestern University's Chicago campus they are reminded of him by Abbott Hall, a multi-storied residence hall erected from funds left to the University by his estate.

The University of Chicago, other schools of medicine and a number of hospitals and research institutions also were generously remembered.

History has recorded Dr. Abbott as a dynamic pioneer in medicine, respected by those who could not agree with him. His spirit and philosophies are perpetuated in the company which bears his name and carries the slogan "Changing Ideas, Changeless Ideals."

NEXT MONTH

The story of Gideon D. Searle, whose experiences in the Civil War aroused his interest in medicine and pharmacy.



Prepared especially for Medical Times by C. Norman Stabler, market analyst of the New York Herald Tribune

INVESTING for the Successful Physician

OILS WELL THAT ENDS WELL

The oil industry, especially the domestic branch of the family, has had a difficult year thus far. Our international cousins have been doing better, largely because the rate of consumption in Europe is moving ahead at a faster pace than in the United States, speaking in percentages, of course.

Domestic producers have been harried by too much—meaning too much production, too much staying at home instead of touring, and too much inventory. Recent reports are that the inventory situation is undergoing improvement. With the good weather we may soon see even more favorable figures. But the first half of the year left much to be desired. Shares of domestic oil companies responded in the stock market accordingly.

Samuel C. Greenfield, in making a study of the oil situation for Hardy & Co., chides the Street for classing as "good" any stock that goes up, and "bad," any stock that goes down, without looking at the fundamentals. He reminds us there is a much sounder basis for judging values, (such as those represented by the oil industry), than merely making quick appraisals on what stocks do.

Consider that oil is the principal source of energy for an expanding industrial world. It is basic in such fields as lubricants, asphalt and petrochemicals. The Standard Oil of California annual report recently estimated that petroleum requirements of the United States in the next fifteen years will exceed the total production since the discovery of oil a century ago.

The Hardy & Co. survey reminds us

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and blanching of
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vasospastic disorders

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sympatholytic effect
adrenolytic effect
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of other significant statistics. In 1936 our refineries processed 2,900,000 barrels of petroleum products daily; it was 7,900,000 barrels in 1957. In 1946 29,000 domestic wells were completed; in 1956 it was 58,000.

From the financial point of view the survey points out that this major growth has been financed principally from internal sources. It presents figures on forty leading oil companies showing, among other things, the cash flow (profits, depreciation and depletion) into company treasuries was in excess of 20 per cent of net worth, in most cases.

Where cash flow is as much as 20 per cent, it means only five years for the amount poured back into the treasury to equal the net worth itself.

The stocks may be "bad" at the moment, but Hardy & Co. regards the industry as hardy.

MONEY RATES

Money rates are at a level that investors and borrowers call "easy." This means that they are relatively lower than they were some months or a year or two ago. Those who wish to borrow, whether they be businessmen, corporations or governmental units, can secure funds at less cost than formerly, and those who buy new bonds must be content with a lower interest coupon.

Rates were deliberately made lower late last year, starting November 14, when the Federal Reserve first reduced the discount rate. Since then it has made three further cuts in this discount rate and has bolstered this with three reductions in member banks' required reserve.

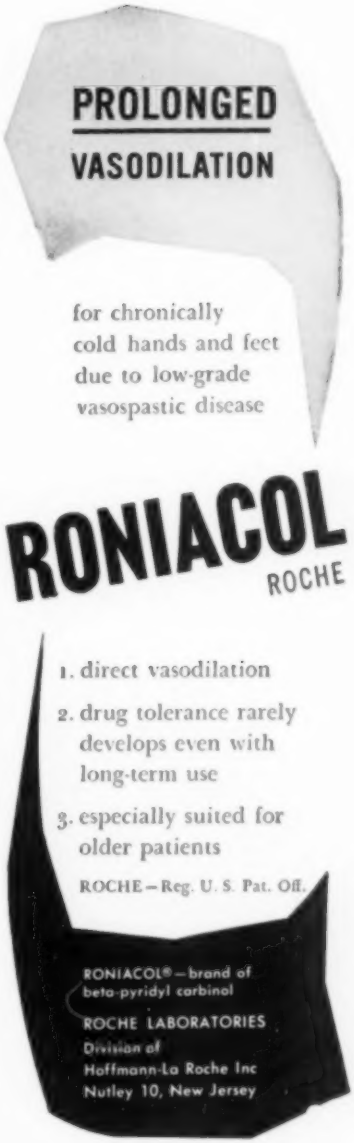
The former made it less costly for debtors and the latter made it possible for banks to lend more, thus also contributing to the credit ease.

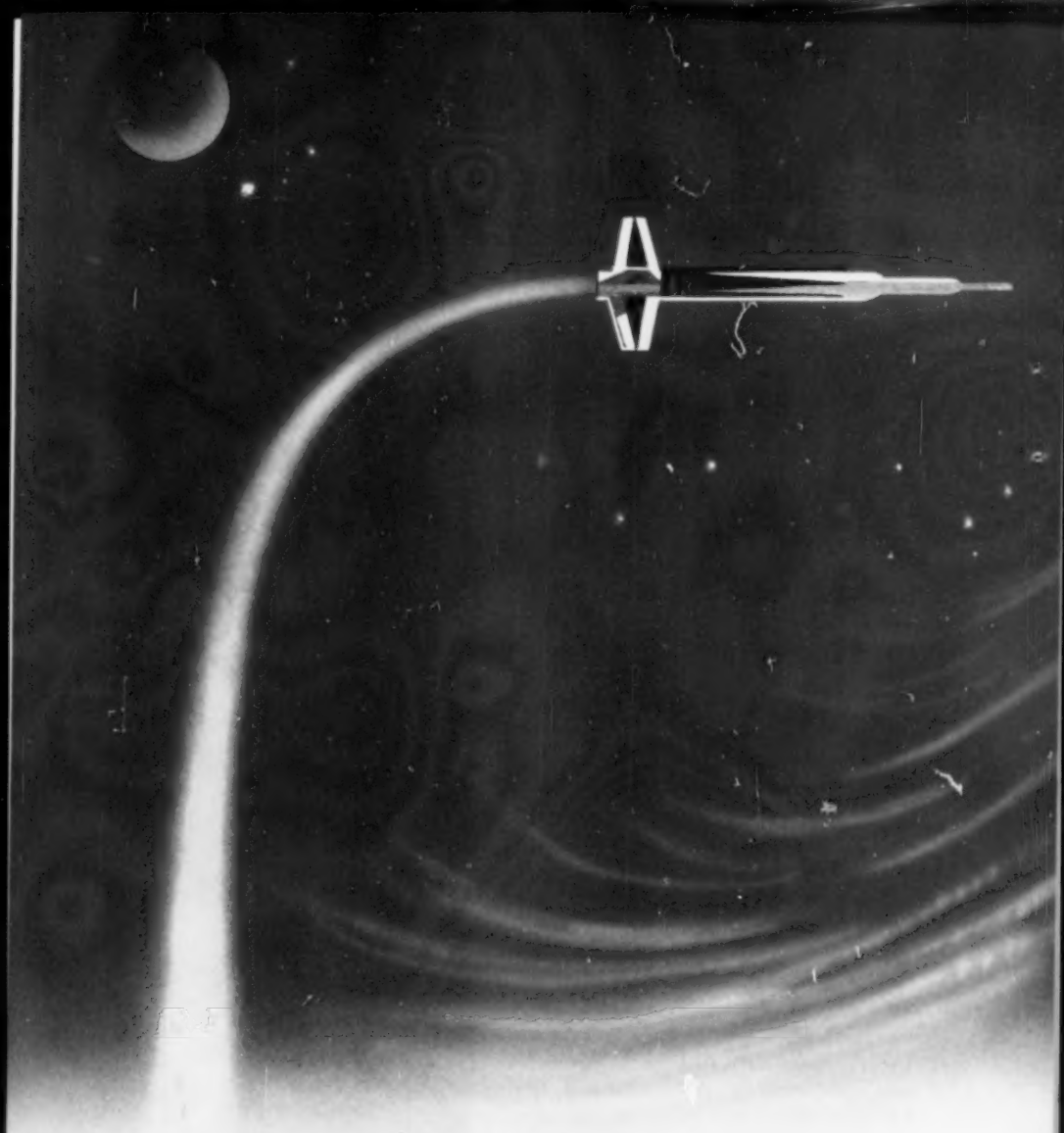
This is a combination that by all the rules of financial economics should make outstanding bonds—those that were marketed prior to the change in the money policy—more valuable. It should do the same for preferred stocks, assuming of course that in the case of both the creditor is a good risk.

The reason is that with money rates easier, a dividend rate, or a coupon rate, becomes relatively more attractive. A five per cent issue may sell at par, or below, when money is tight and it is possible to get nearly that same per centage on short-term loans. But let competing rates for money turn easy, and then the 5 per cent dividend or coupon takes on a brighter hue. It becomes relatively more attractive to the creditor investor. Consequently he will bid up in order to obtain these obligations. An issue for which he would only pay 90 when money rates were tight, becomes more desirable, and he may bid par or 110 for it.

It is true we had a major bulge in the bond market, especially the government bond market, after this artificial ease was made the order of the day by the Federal Researve. That boom has not continued uninterruptedly. In fact in the last few weeks those investment banking syndicates that have been offering new issues of corporate and municipal bonds have been complaining. They know that rates are easy and that money is available, but when they offer what appears to be an attractive issue it moves slowly, in many cases.

The research department of the Investment Bankers Association recently





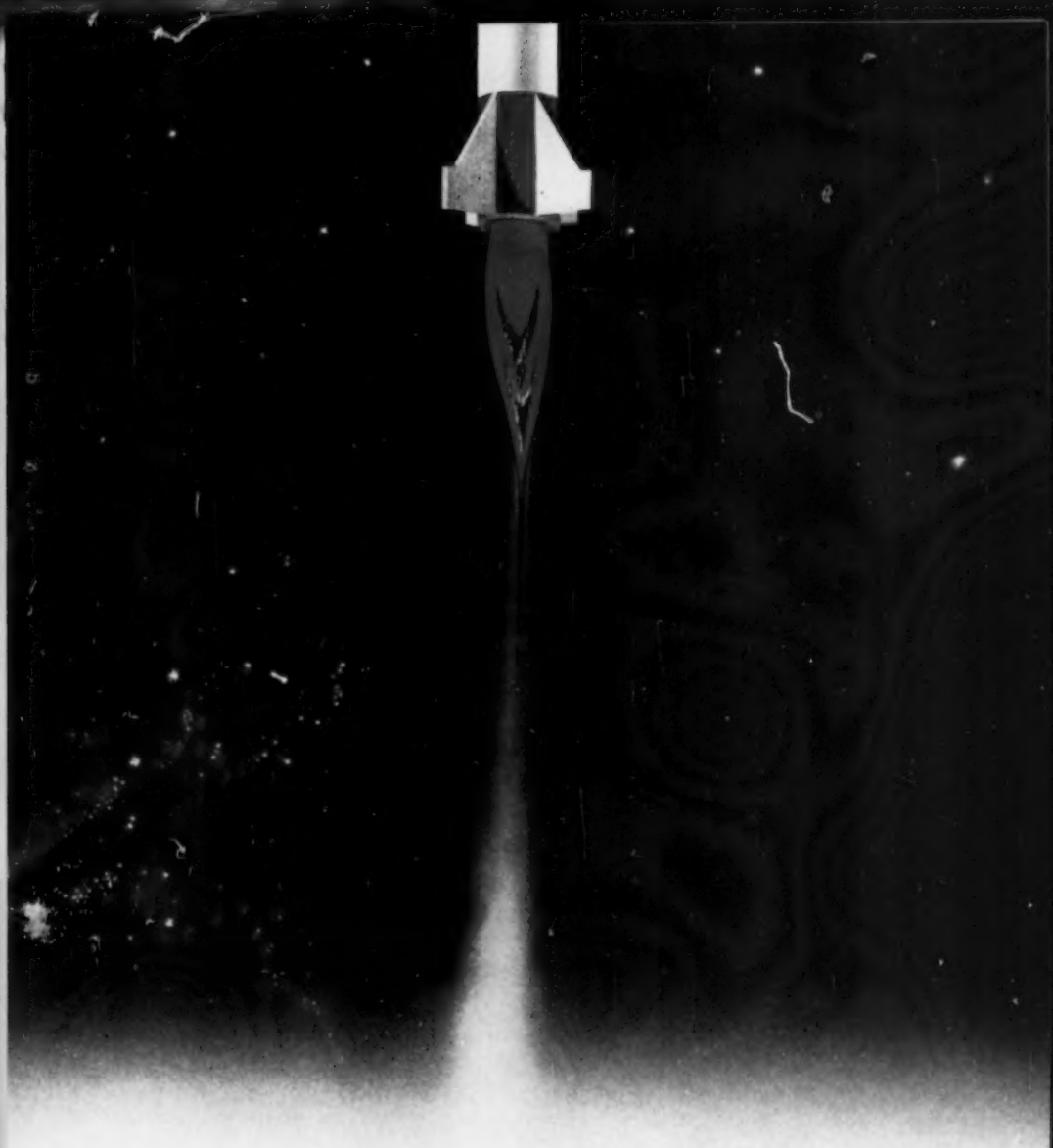
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INJECTION PERFORMANCE

completed a study in which it found a readjustment of the new-issue market for tax exempt bonds is already under way. This is also affecting the corporate and government bond market.

Among the elements apparently involved in an answer to the bond market's question—where's the money?—are the following:

- The advance in bond prices was well discounted by dealers but, it now seems, the huge supply of bonds which would continue to come to market was not sufficiently discounted, so that bond prices retreated from their highs of earlier this year because of a greater supply situation.

The corporate new issue market has held up well in volume, although admittedly a good part of this volume involves optional refunding and therefore does not represent a net new claim on the capital market. And, as is well recognized, state and municipal flotations were very high in the first quarter, amounting to $2,182,000,000, an increase of 26% over the $1,726,000,000 offered in the first quarter of 1957.

- While the free reserves of member banks have gone up, by Federal Reserve action and because of a decline in business loans, the reserves are badly distributed, with much of the excess held by country banks which apparently are not making full assessment utilization of their assets.
- The reduction in member bank required reserves was partially offset by an outflow of gold, which so far this year represents the full inflow of gold to us last year.
- Some sophisticated investment funds, which were in the bond market for its rise, are now being invested abroad, where yields are substantially higher.
- Some investment funds, normally associated with equity positions in the stock market, sought a safe harbor in the bond market but are now being reinvested in equities. There is considerable evidence of a return of this money into equities and out of bonds.
- Investors chiefly concerned with the bond market, accustomed to the higher yields of the last three years, are strongly resisting yield levels any lower than those of today.

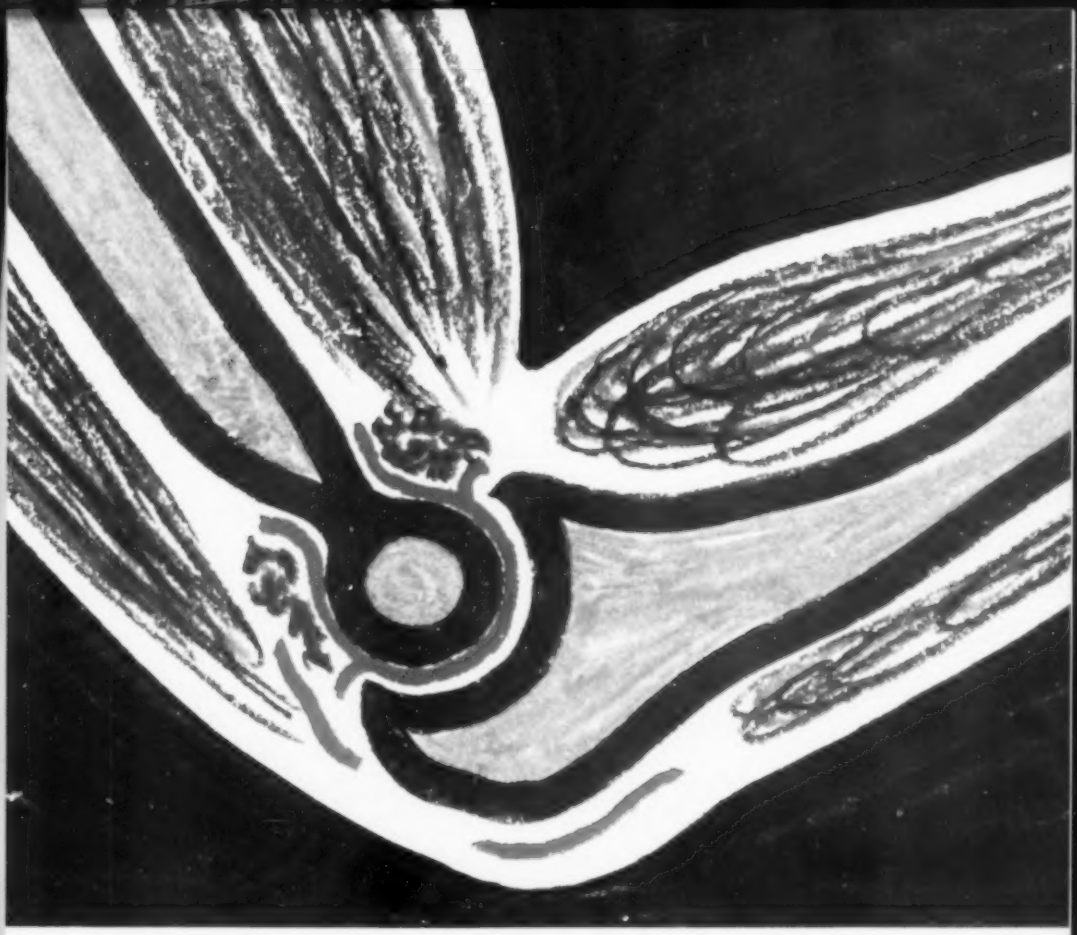
STATISTICS ON AVON

Physicians may not be acquainted with Avon Products, Inc., but perhaps if they asked the feminine members of their households, or those on the nursing staff, they would find that the name has been known since 1886—not by these individuals, of course, but by their grandmothers and great-grandmothers.

That's a long history, and apparently the ladies like Avon's cosmetics and toiletries, for last year the company topped $100,000,000 in sales, the first and only time this feat has been accomplished by any cosmetics concern.

It conducts its selling through door-to-door contacts, with a corps of 100,000 women representatives, who are capable of discussing with housewives such matters as appropriate shades, fragrance and similar beauty matters.

The stock is traded in over-the counter, which may explain why its name is not as well known as other blue chips of the marketplace. Yet in matters of sales gains, profits before and after taxes, and percentage increases in dividends, it yields to none, not even such magic names as duPont, Dow, Scott Paper, Minneapolis-Honeywell, IBM, or Minnesota Mining.



in a wide range of disorders—arthritic · phlebitic · rheumatic

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The broad-spectrum efficacy of BUTAZOLIDIN has been established by over 1,000 published reports and 150 million patient-days in: gouty arthritis; acute superficial thrombophlebitis; bursitis; rheumatoid arthritis; thrombosed hemorrhoids; rheumatoid spondylitis; osteoarthritis; psoriatic arthritis; peritendinitis.

BUTAZOLIDIN (phenylbutazone GEIGY): Red coated tablets of 100 mg.
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Pharmacologically distinct from the amphetamines, PRELUDIN induces little or no C.N.S. stimulation[1,2] while providing selective and effective appetite suppression.

- *produces weight loss two to five times greater than that achieved by dieting alone*[1,3]
- *causes no serious side effects, allergic or toxic reactions*[1,4,5]
- *a "...valuable adjunct to the dietary management of obesity."*[5]

GEIGY
ARDSLEY, N.Y.

(1) Gelvin, E. P.; McGavack, T. H., and Kenigsberg, S.: Am. J. Digest. Dis. *1*:155, 1956. (2) Holt, J. O. S., Jr.: Dallas M. J. *42*:497, 1956. (3) Ressler, C.: J.A.M.A. *165*:135 (Sept. 14) 1957. (4) Council on Pharmacy and Chemistry, New and Non-official Remedies: J.A.M.A. *163*:356 (Feb. 2) 1957. (5) Feldman, R.; Alberton, E. C., and Craig, L.: California Med. *87*:408, 1957.

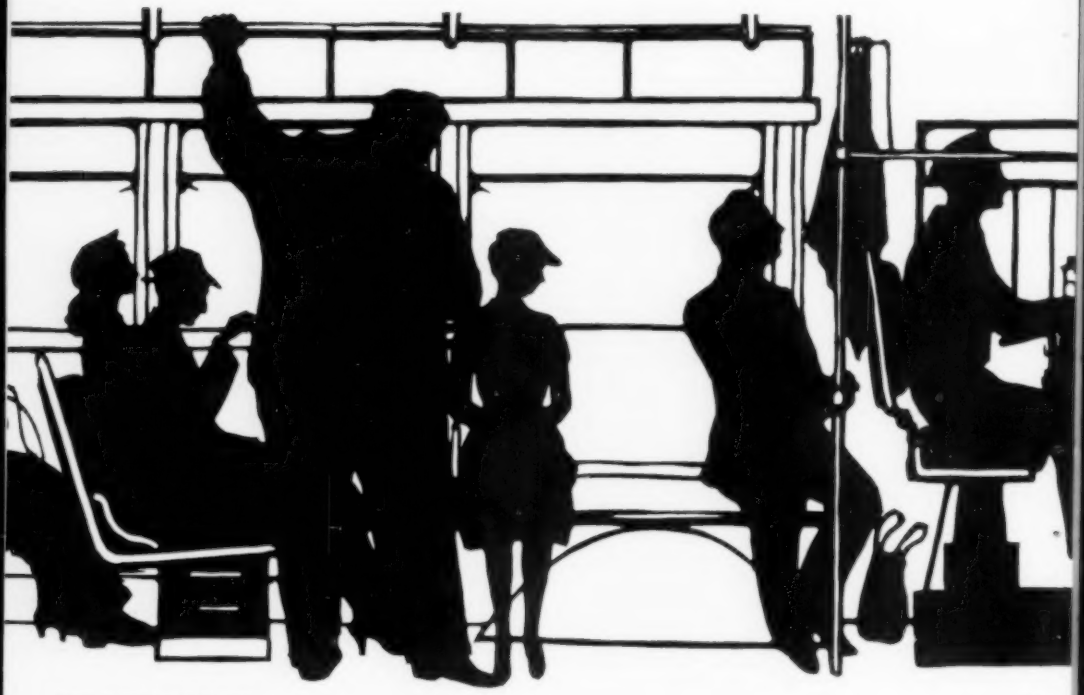
PRELUDIN® (brand of phenmetrazine hydrochloride). Scored, square, pink tablets of 25 mg. Under license from C. H. Boehringer Sohn, Ingelheim.

PRELUDIN®

(brand of phenmetrazine hydrochloride)

specifically for weight reduction

appetite curbed, sleep undisturbed



original silhouette hand cut by Mochi

The investment banking firm of Lee Higginson Corporation recently published an extensive analysis on Avon Products. It notes that the company sells in all 48 states, Alaska, Hawaii, Puerto Rico, Canada, Mexico, Cuba and Venezuela.

Last year was the twelfth year in a row that sales have advanced to a new record high. Earnings, after taxes, have scored a new high in each of the last five years.

Net income last year amounted to $9,342,505, or $3.05 a share, up 15 per cent from 1956's total of $8,127,271, or $2.65 a share. Lee Higginson Corporation estimates this year's sales will be up 11 to 12 percent, to about $112,000,000, and that earnings will be around $11,000,000 or about $3.60 a share.

The common stock enjoys an active market. Among its institutional stockholders is Tri-Continental Corporation, one of the larger closed-end investment concerns, which recently bought 39,000 shares.

The firm believes Avon offers considerable long-term appeal. It particularly likes its merchandising policy of door-to-door selling, stating that, "the possibilities of this operation are virtually unlimited—potential customers include practically every housewife in the United States and in the foreign areas where operations are now conducted or may be conducted in the future."

Operations started 72 years ago, in New York City, as the California Perfume Co. The home office is still in New York but manufacturing and distributing operations were moved to Suffern, N. Y. in 1898.

Six manufacturing laboratories are operated, four in this country, one in Canada and one in Mexico. A seventh, in Cuba, is expected to go on stream this year. From the company's beginning it has always followed direct-to-the-home selling method, adhering closely to the basic merchandising principles laid down by its founder, D. H. McConnell.

The survey says the company is believed to maintain the broadest line of cosmetics and toiletries in the United States. Included in the line is a variety of: make-up, deodorants, beauty dusts and other grooming essentials; bath oils, and body powders, creams, lotions, hair preparations, shaving items, toilet waters, colognes, sachets, atomizers, gift sets, toilet soaps, dentrifices and tooth brushes.

The company has 3,037,590 common shares outstanding and a small issue of 32,033 shares of 4 per cent cumulative preferred. Long-term debt amounts of only $5,200,000. At the close of last year consolidated working capital amounted to $22,035,130, which included $16,197,044 cash. At the close of the previous year working capital was $18,485,680. Consolidated net worth at the close of 1957 was $30,550,095, a gain of $5,690,403 for the year.

Avon sales, between 1948 and the close of 1957, were up 371 per cent, pretax earnings up 688 per cent, net income up 520 per cent, and cash dividends up 525 per cent.

The survey grants that many investors shy away from getting into the cosmetic and toiletry business, because purchasers of such products are notoriously fickle. Such shares are held in low regard by many institutional and individual investors. But the firm maintains that Avon's common stock does not fall into the category of other cosmetics, in that it operates differently from its

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Advantages of Softran

1. **Provides effective tranquilization with complete physiological safety.**
2. **Often reduces hypertension by means of extended relaxation.**
3. **Allows natural sleep by releasing tensions.**
4. **Softab form is more convenient...can be taken anywhere, anytime, no water needed.**



Excerpts

from clinical and experimental studies with Softran

Softran is a "true" tranquilizer

Pharmacologic screening involving four distinct types of techniques has demonstrated that buclizine [SOFTRAN] is a "true" tranquilizer. The experimental animal did not exhibit motor stimulation or depression often seen with a number of agents currently being used as tranquilizers. *Cutting, Windsor, Baslow, Morris, Read, Dorothy and First, Arthur, School of Medicine, Stanford University, Stanford, California: The Use of Fish as a Sensitive Bioassay in Estimating the Effects of Various Drugs, submitted for publication.*

Softran is safe and effective for mild to moderate anxiety-tension states

Studies with buclizine [SOFTRAN] indicated it to be a potent and versatile therapeutic agent with clear-cut tranquilizing properties. It was found to be a safe and effective ataraxic agent for mild to moderate anxiety-tension states and mild senile agitation ...

With the tensions and stresses of everyday life mounting to a new high every day, the need for such preparations is apparent. The absence of habituation, tolerance and toxicity makes it of especial value. Additional properties of antihistaminic, anti-nauseant, anti-motion sickness and hypotensive activity make buclizine [SOFTRAN] a unique compound in this field. *Settel, Edward, M.D., Brooklyn, New York: Buclizine, a New Tranquilizing Agent, submitted for publication.*

Softran is particularly effective in the "anxious" pregnant patient and in dysmenorrhea and premenstrual tension

Buclizine [SOFTRAN] was found to be of value in certain anxiety and tension states associated with obstetrical and gynecological problems. It is particularly effective in the "anxious" pregnant patient, as an adjuvant to the treatment of pruritus vulvae of many etiological types, and may be used when tension is an associated problem in pelvic pathological states, as well as in dysmenorrhea and premenstrual tension. *Karnaky, Karl J., M.D., Houston, Texas: Buclizine Hydrochloride in Obstetrics and Gynecology: A Preliminary Report, submitted for publication.*

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pleasant tasting
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Formula:
Buclizine Hydrochloride ..... **50 mg.**
1-p-chlorobenzhydryl-4-p-(t)-butylbenzylpiperazine dihydrochloride

Usual dosage:
One tablet, 1 to 3 times daily / CHILDREN: ½ tablet, 1 to 2 times daily.

Softran produced no undue drowsiness or other side effects

In studies using buclizine [SOFTRAN] for patients with anxiety associated with infertility SOFTRAN was found to be an effective tranquilizer. In doses of 50 mg. twice daily adequate effectiveness was obtained without undue drowsiness or other noticeable side effects. *Schultz, John M., M.D., Miami, Florida: Excerpt from clinical study.*

Softran is a superior tranquilizer in disturbed menopausal patients

We have been using buclizine hydrochloride [SOFTRAN] for six months on over 200 patients, both obstetrical and gynecological. We have found it to be a very superior tranquilizer in those patients who are at the menopause age and require adjuvant therapy to ordinary hormone replacement.... It has been universally well tolerated, with no side reactions of any kind. In only two cases in the entire group has there been objectionable lassitude or drowsiness. These have been counteracted very simply by the use of amphetamine compounds. We can unhesitatingly recommend it for use in such cases. *Rutherford, Robert N., M.D., Seattle, Washington: Excerpt from clinical study.*

Softran often reduces hypertension

It is particularly noteworthy that systolic blood pressure is often reduced in patients with essential hypertension. Diminution of psychic stress factors is apparently responsible for this hypotensive effect. *Settel, Edward, M.D., Brooklyn, New York: Buclizine, a New Tranquilizing Agent, submitted for publication.*

Softran relieved anxiety symptoms associated with infertility

Buclizine [SOFTRAN] and placebo were employed in a double blind study conducted with patients having anxiety symptoms associated with infertility. Marked tranquilizing properties were observed with the buclizine-containing preparation [SOFTRAN]. An effective daily dose was 2 tablets (50 mg. each). The product was well tolerated; side effects such as drowsiness, were minimal. *Tyler, Edward T., M.D., Los Angeles, California: The Use of Fish in the Evaluation of Drugs Affecting the Central Nervous System.*

Stuart

THE STUART COMPANY
PASADENA, CALIFORNIA

*TRADEMARK

competitors and produces different results. Its operations have been profitable each year since 1916.

The author of the analysis says that while the idea may seem far-fetched, the view has been advanced that Avon is not so much a cosmetic company, as a supremely successful merchandiser. According to this school of thought, the company, with its unique merchandising principles, could have started in a field completely disassociated from cosmetics, and still have become a leading growth organization which it is today.

Guide For Investors

Based on recommendations of the Securities and Exchange Commission in cooperation with the New York Stock Exchange, American Stock Exchange, National Association of Securities Dealers and others.

1. Think before buying, guard against all high pressure sales.

2. Beware of promises of quick spectacular price rises.

3. Be sure you understand the risk of loss as well as prospect of gain.

4. Get the facts—do not buy on tips or rumors.

5. Give at least as much thought when purchasing securities as you would when acquiring any valuable property.

6. Be skeptical of securities offered on the telephone from any firm or salesman you do not know.

7. Request the person offering securities over the phone to mail you written information about the corporation, its operations, net profit, management, financial position and future prospects.

A BILLION DOLLAR BABY

That exclusive club, consisting of companies that can boast of a billion dollars in sales a year, has a new member. It is Armco Steel Corporation, seventh largest steel producer in the nation, with headquarters in Middletown, Ohio. It merged recently with National Supply Co., Pittsburgh.

The new combination is the forty-ninth member of the fraternity.

National Supply, the world's largest manufacturer of oil and gas fired equipment, will be operated as a subsidiary of Armco, under its present management.

HAVE A BITE OF TREE

The day may come when the world will have to seek new sources of food. The subject is receiving the consideration of our forest products industry, as well as others.

Michael A. Brown, general sales manager of Rayonier, Inc., a producer of cellulose, in a recent address before the American Chemical Society, leads us to believe we may some day be eating trees.

He told the chemistry experts the key to large food sources may be found in the "billions of gallons" of sulfite waste liquors American industry disposes of each year to produce only 3,250,000 tons of cellulose and paper pulps.

These waste liquors could produce "some 250,000 tons of nourishing foods a year—without alcohol," the Rayonier official said.

According to him, yeasts are produced through fermentation of wood sugars

both provide potent corticosteroid therapy. . .

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& PARACORTOL*

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3 to 5 times the activity of cortisone or hydrocortisone

supplied: PARACORT and PARACORTOL are available as 5-mg. and 2.5-mg. scored tablets; bottles of 30, 100, and 1,000.

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found in these wastes which are "relatively high in protein, essential amino acids and all the vitamin B. group."

He said costs of producing forest foods are "potentially" low but since current costs are from five to seven cents a pound, only about 7,500 tons of yeast are being produced annually and these are going into livestock, poultry and fish feed.

But the products of "silvachemistry" are also components for "baby foods, ice cream, candy, bread, crackers, spaghetti and macaroni, canned meats and gravies, soups, puddings, beverages and cereals," Brown declared.

BRITISH CONSOLS GET A PLAY

Security markets in the United States and Canada offer the investor every sort of vehicle he could desire, ranging from the highest grade conservative municipal bond down to the most speculative option on a cow pasture that may or may not contain uranium. It would seem that he who wishes to invest, or speculate, need not go abroad to get action.

Yet two of Wall Street's firms, and possibly more, recently suggested to their customers that they buy British consols. These are the famous crown annuity stocks which have been referred to in English plays and novels for two hundred years. They were outstanding before the New York Stock Exchange was formed.

When these two firms, Carl M. Loeb, Rhoades & Co. and Carl Marx & Co., gave their advice on these venerable

new orally potent narcotic analgesic

'LERITINE'

ANILERIDINE

unsurpassed even for

intense pain

- orally potent
- consistently gives profound relief
- minimal side effects

Additional information to physicians on request.
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LERITINE is a trade-mark of Merck & Co., Inc.

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in Asthma

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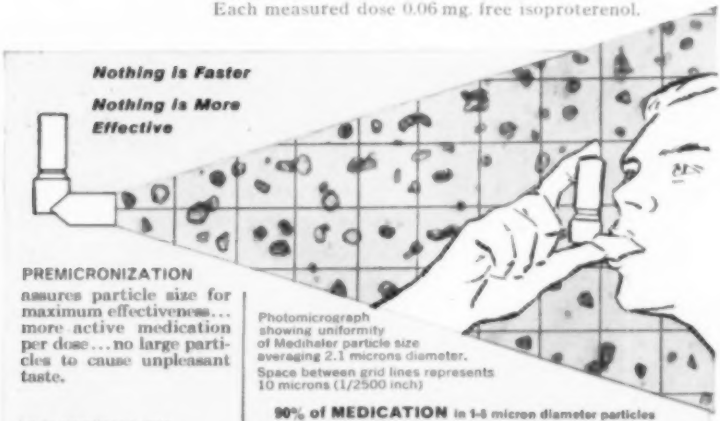
For quick relief of bronchospasm of any origin. More rapid than injected epinephrine in acute allergic attacks.

Epinephrine bitartrate, 7.0 mg. per cc., suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose 0.15 mg. free epinephrine.

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Unsurpassed for rapid relief of symptoms of asthma and emphysema.

Isoproterenol sulfate, 2.0 mg. per cc , suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose 0.06 mg. free isoproterenol.



PREMICRONIZATION
assures particle size for maximum effectiveness... more active medication per dose... no large particles to cause unpleasant taste.

THE MEDIHALER® PRINCIPLE
means automatically measured-dose aerosol medications in spill-proof, leakproof, shatterproof, vest-pocket size dispensers.

Photomicrograph showing uniformity of Medihaler particle size averaging 2.1 microns diameter. Space between grid lines represents 10 microns (1/2500 inch)

90% of MEDICATION in 1-6 micron diameter particles

99.9% of PARTICLES in 1-7 micron diameter range

New Improved Premicronized Medihaler suspension...55 mcg. drug/dose 1-5 microns range

Old type aerosol solution	10-12 mcg. drug/dose 1-6 microns range
Squeeze bulb nebulizers	2-3 mcg. drug/dose 1-6 microns range

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Clinical studies conducted in major hospitals and medical schools demonstrate that scientifically-measured motion induced into the patient can be of value in the treatment of:

Diabetes

Statistically significant reduction of blood sugars in many patients.

Arthritis

Early symptomatic relief in degenerative and osteoarthritis.

Hypertension

Marked lowering of blood pressure in most patients.

Obesity

Up to 12 pounds loss in 10 weeks (7½ pounds average) without dietary restriction.

Peripheral-vascular problems . . . neuromuscular problems . . . certain metabolic disorders—functional improvement or pronounced circulatory assistance.

The device used in clinical studies of this new therapeutic principle—"motion in medicine"—was Metabol'aid.

Upon your request, a detailed brochure on Metabol'aid—with clinical reports and complete bibliography—will be provided. Just jot "Metabol'aid" on your Rx blank and mail to Metabol'aid, Dept. MT-68, 1919 Vineburn Avenue, Los Angeles 32, Calif.



induced rhythmic motion





Folds compactly for easy storage

This is Metabol'aid—a new precision mechanical apparatus that gently induces scientifically-measured rhythmic motion into any prescribed area or areas of the body.

Years of research and clinical studies lie behind Metabol'aid, which is already in use in hospitals, clinics, M.D. offices, and patients' homes.

Your prescription is required for Metabol'aid, which is primarily designed for regular daily use by your patients in their homes.

metabol'aid m a

British obligations the 4 per cent consols were selling at 72 and the 2½ per cent issue at about 50.

At these discounts from par their yields work out at between 5 and 5½ per cent. In other words they have become more attractive, now that we have an easy money policy in the United States. The two firms opined that the only way they could move from this level is up.

The word "consols" means consolidated stock. Actually they are perpetual bonds. Hence they fluctuate conversely with money rates, rising when other rates are soft and declining when other rates are hard.

Oscar Wilde referred to consols by observing that with 10,000 pounds sterling invested in them, he wouldn't have to work. The interest on such an amount would have supported a family comfortably in his day.

The business magazine "Forbes" says consols are the grand-daddy of all government securities. Before Sir Henry Pelham invented them, the monarchs of Britain and other countries borrowed money from their subjects on short terms—often by forced loans. Pelham's predecessors conceived the idea of selling the Queen's subjects annuities to raise money instead. He pulled the master stroke of making these annuities permanent after the death of the first holder, thus giving them a high negotiable value. He consolidated many of them into one issue—hence the name consol.

A consol is a bond that never ma-



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A "STANDARD" IN BOWEL SURGERY

Many years of widespread use have demonstrated the importance of SULFASUXIDINE in bowel surgery. It minimizes the danger of infection by producing a low bacterial count in the gut and reduces incidence of flatulence. Normal healing is encouraged.

Available as 0.5 Gm. tablets in bottles of 100 and 1000; powder form in 1-pound bottles.
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during pregnancy
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Just one NATABEC Kapseal daily, as prescribed by her physician, "trellises" her good diet with a carefully balanced formula of vitamins and minerals. As nutritional support for the gravida and the nursing mother, NATABEC helps to promote better health for the mother and for her child.

dosage: As a dietary supplement during pregnancy and throughout lactation, one Kapseal daily, or more, as required. Available in bottles of 100 and 1,000.

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when you treat hypertensive patients

double duty RAUDIXIN

Squibb Standardized Whole Root Rauwolfia Serpentina

is the solid base line for successful therapy



Raudixin helps you relieve pressures in your patients

Raudixin "lowers blood pressure and slows the pulse rate much more efficiently than the barbiturates. . . . It is not habit-forming and is synergistic with all other known hypotensive drugs."*

Raudixin helps you relieve pressures on your patients

Raudixin "relieves anxiety and tension, particularly the tension headache of the mild hypertensive patient, better than any other drug."*

RAUDIXIN..."is the best symptom reliever."*

In mild to moderate cases, Raudixin is frequently sufficient.

Base line therapy with Raudixin permits lower dosage of more toxic agents. The incidence and side effects of these agents are minimized. Diuretics often potentiate the antihypertensive effect of Raudixin.

*Finnerty, F. A. Jr.: New York State J. Med. 57:2957 (Sept. 15) 1957.

SQUIBB *Squibb Quality—the Priceless Ingredient*

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When steroids are indicated, the adjuvant use of a stress formula containing essential vitamins helps meet increased metabolic demands. STRESSCAPS provide the principal water-soluble vitamins in a professionally accepted formulation.

STRESSCAPS IN STRESS

- **Infection**
- **Physiologic Trauma**
- **Endocrine Dysfunction**
- **Emotional Stress**
- **Pre- and Postoperatively**

Each Capsule Contains:

Thiamine Mononitrate (B_1)	10 mg.
Riboflavin (B_2)	10 mg.
Niacinamide	100 mg.
Ascorbic Acid (C)	300 mg.
Pyridoxine HCl (B_6)	2 mg.
Vitamin B_{12}	4 mcgm.
Folic Acid	1.5 mg.
Calcium Pantothenate	20 mg.
Vitamin K (Menadione)	2 mg.

Average Dose: 1-2 capsules daily.

STRESSCAPS*

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LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

*Reg. U.S. Pat. Off.

tures. The British Crown has outstanding $765 million dollars worth of consols and no matter how great its troubles, no British government ever has failed to pay a single farthing of consol interest right on the dot.

Forbes says that while country squires, noble Lords and merchants and tradesmen took consols to their hearts and strongboxes, the great English economist Adam Smith looked on them with suspicion. He thought funding public debt was all wrong—and would be the ruination of England.

COLLEGES LIKE STOCKS

Boston Fund, one of the big mutual funds, has taken a look at the portfolios of colleges and universities and found they like common stocks. Among such equities, they lean to oils.

Endowments of American institutions of learning are under the tender care of hard-headed business men, in almost all cases. They are usually old grads, and likewise they are men who have made a mark for themselves in their respective lines of endeavor.

Alma Mater has a real meaning to them, and they treat her finances with more tenderness and care than they would those of the close friend they meet at the club, who wants a tip on something good, and who may be instrumental in getting them that order for a boatload of widgets. With the latter individual, they will take a chance; with the institution where they learned to wear the old school tie, the matter takes on the greatest degree of seriousness.

Boston Fund tells us they go for equities. It reviewed the holdings of sixty-three such institutions, which have endowments ranging from $3,000,000 to $500,000,000. It found 54.8 per cent of such endowments in common stocks.

Almost exactly nine-tenths of the endowment funds are in securities, the Fund report shows: 30 per cent in bonds, 4.1 per cent in preferred stocks, and one per cent in miscellaneous securities, in addition to the common stocks. Cash holdings represent 1.4 per cent of the total, while 1.9 per cent is invested in an income-producing phase of the college plant.

Income-producing real estate (other than plant) and mortgages account for 6.8 per cent of the total: real estate under long-term net lease, 2.4 per cent; operated real estate, 1.2; mortgages, 2.3; "other" 9.

Analysis of the common stock holdings of 13 of the institutions showed that 55 to 76 per cent of these stocks are industrials, with public utilities next favored (15 to 27 per cent). Largest of the industrial holdings are petroleum stocks, which account for about 10 per cent of all their endowment funds. All the 13 institutions hold common stock of Standard Oil Co. (N.J.), which alone accounts for about 3 per cent of the total endowment of these institutions.

Of 56 endowment portfolios studied, Standard Oil (N.J.) common stock is in 51, with a total market value of slightly over $100 million. Other common stocks most commonly held, and the number of colleges holding each: General Electric, 31; Eastman Kodak, 7; Christiana Securities, 12; DuPont, 20; General Motors, 26; Standard of California, 22; Gulf Oil, 19; Aluminium,

Ltd., 8; Texas Co., 25. Boston Fund's report shows that five of these ten are among the ten common stocks most widely held by 225 investment companies.

WELLINGTON APRIL SALES INCREASE

Wellington Fund sales for April were nearly 30 per cent higher than for April 1957, according to A. J. Wilkins, vice president.

The comparable sales figures are as follows:

April 1958	*April 1957*
$9,293,037	$7,222,580

The record April 1958 volume follows a first quarter which also showed an increase over 1957.

The comparable sales figures for the first four months of 1958 and 1957 are as follows:

1958	*1957*
$35,240,971	$32,654,830

FUND SEES BETTER OIL EARNINGS

Gas Industries Fund's president, James H. Orr, believes the oversupply of oil, resulting from the reopening of the Suez Canal and from reduced business activity, is being checked. Factors contributing to this include the reduction in imports, reduction of crude oil production and the cutback in refinery operations. He looks for gasoline inventories to undergo their normal decline, now that we are in the season of heavy motoring.

The natural gas industry, he adds, presents a different picture. With no inventory problems and demand continuing to increase strongly, most natural gas pipelines reported record earnings and dividends. Gas utilities also had a good year. Total gas sales during 1957 were up about 4 per cent over the previous year and construction expenditures in the industry were at an all-time high of $2 billion.

Turning to the future, Mr. Orr pointed out that the growth of the oil and natural gas industry has been consistent and impressive since World War II, and that the demands of our growing population make it reasonable to expect that this strong growth trend in the use of energy will continue.

Gas Industries Fund per share net asset value at the March 31, 1958 year end was $11.44 after allowance for payment of security profits of 29 cents. This compares with net asset value of $10.77 three months previous and $13.93 a year ago. The total net assets of the Fund rose to $56,500,000 over the $52,700,000 of the previous quarter.

CHOICE FOR DISCRETIONARY FUNDS

Like the colleges, those discretionary accounts that are in the hands of our major banking institutions, also lean to common stocks as against fixed interest bearing securities. This was illustrated recently by a compilation made by the

DISCRETIONARY FUNDS

U. S. Governments	$ 170,000,000	11.0%
Other Governments	30,000,000	2.0
Corporate Bonds	364,600,000	23.5
Preferred Stocks	154,100,000	10.0
Common Stocks	814,100,000	52.0
Mortgages	16,500,000	1.0
Cash	8,400,000	0.5
	$1,558,000,000	100.0%

magazine "Trusts and Estates."

It conducted a survey and found there are now 269 common trust funds in operation by 212 banks and trust companies in forty-one states, the District of Columbia and Hawaii. Aggregate investments for 245 of these funds amount to $1,968,806,851, and this sum is held for the benefit of 86,367 individual trust accounts.

A common trust fund provides collective investment of certain of the trust accounts of a bank, which usually are too small to make adequate diversification and proper individual supervision of investments possible.

The handling of such common trust funds is similar to that of our mutual funds, the aims being diversification and professional supervision.

"Trusts and Estates" breaks it down, as of the close of last year, as shown in the chart above.

WITH THE ANALYSTS

The following list is of studies recently released by various financial houses. Addresses given are for New York City.

SUBJECT	FIRM	ADDRESS
Electric Storage Battery Co.	Gregory & Sons	72 Wall St.
United Corporation	Harris, Upham & Co.	120 Broadway
Marine Midland Corporation	Halle & Stieglitz	52 Wall St.
United Gas Corporation	Halle & Stieglitz	52 Wall St.
Coastal States Gas Producing Co.	Blair & Co., Inc.	20 Broad St.
Southern Pacific Co.	Fahnestock & Co.	65 Broadway
Riley Stoker Corporation	H. Hentz & Co.	72 Wall St.
Anderson, Clayton & Co.	H. Hentz & Co.	72 Wall St.
Thatcher Glass Co.	Green, Ellis & Anderson	61 Broadway
Automatic Vendor Companies	Sprayregen & Co.	26 Broadway
Texas Instruments, Inc.	Robert Timpson & Co.	63 Wall St.
St. Joseph Lead Co.	Hayden, Stone & Co.	25 Broad St.
ACF-Wrigley Stores, Inc.	Orvis Brothers & Co.	15 Broad St.
High Voltage Engineering Corp.	Carl M. Loeb, Rhoades & Co.	42 Wall St.
American Hospital Supply Corp.	Eastman Dillon, Union Securities & Co.	15 Broad St.
Coca-Cola Co.	Eastman Dillon, Union Securities & Co.	15 Broad St.
Colgate-Palmolive Co.	Paine, Webber, Jackson & Curtis	25 Broad St.
Celanese Corp. of America	Thomson & McKinnon	11 Wall St.
Natural gas distributors	Thomson & McKinnon	11 Wall St.
Lockheed Aircraft Co.	Reynolds & Co.	120 Broadway
Tishman Realty & Construction	Burnham & Co.	15 Broad St.
Dollar averaging	F. I. duPont & Co.	One Wall St.
Virginian Railway Co.	R. W. Pressprich & Co.	48 Wall St.
Stock Market vs. Business	Ira Haupt & Co.	111 Broadway
Drugs—Dynamic or Dangerous?	L. F. Rothschild & Co.	120 Broadway



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When progestational proliferation of the endometrium is inadequate for ovum nidation, conception cannot occur. In such cases of infertility, progestational therapy with NORLUTIN during the latter half of the cycle often produces clinically desirable results. Through endometrial improvement the possibility of conception is greatly enhanced.

CASE STUDIES*

NORLUTIN or a congener was given to 50 infertile patients daily from the fifth to the twenty-fifth day of their cycles. Within five months of their last treated cycles, seven women conceived. While two of these had secondary infertility . . . five had been inexplicably barren for from three to six years.

INDICATIONS FOR NORLUTIN:

conditions involving deficiency of progesterone such as primary and secondary amenorrhea, menstrual irregularity, functional uterine bleeding, endocrine infertility, habitual abortion, threatened abortion, premenstrual tension, and dysmenorrhea.

PACKAGING: 5-mg. scored tablets (C. T. No. 882), bottles of 30.

*Rock, J.; Pincus, G., & Garcia, C. R.: *Science* 124:891 (Nov. 2) 1956.

PARKE, DAVIS & COMPANY · DETROIT 32, MICHIGAN

24059

Questions and Answers

Q. ***A friend suggested I buy Houdaille Industries, on the theory that the situation among automobile suppliers will get better before it gets worse. Would you give an opinion on this?***

A. I wouldn't pursue the stock. Certainly its position should improve when we get a pickup in the automobile industry. Its construction business probably will improve before that, aided by the highway program. If you are willing to wait, and wish to enter buying orders on a scale down, you should be rewarded some of these days. If you are looking to the near term however, we think you could do better in other stocks, such as the drug and pharmaceutical category.

Q. ***Do you have any favorites in the retailing field?***

A. Shares of retail merchandisers have been doing better than the average the last few months. They are regarded as defensive issues, in a time of doubt on the future of business and the future of the stock market. I note that investment companies have been increasing their line in this field. Recent reports show that Dividend Shares, although selling 2,500 shares of W. T. Grant, bought 5,200 May Department Stores. Putnam Fund bought 29,000 Rich's. Selected American bought 13,000 ACF-Wrigley and Tri Continental bought 25,000 Winn-Dixie. Federated Department Stores has long been a favorite for investment accounts.

Q. ***Would you give an opinion on Gardner-Denver?***

A. The first part of the year was not a good one for this company but it didn't fare any worse than others in the heavy lines. Sales in the first quarter were off 16.7 per cent from a year ago, and earnings 73 cents a share against $1.05 in the like period of 1957. The company has been able to obtain a nice balance in the matter of diversification, however, and this should stand it in good stead when the economy rights itself. It produces industrial equipment, construction equipment, oil field products and mining supplies.

Q. ***I am holder of Twentieth Century Fox and have been considering liquidating my position. Do you regard this as advisable?***

A. My inclination would be to hold it. First quarter earnings were below those of a year ago but for the first half it stands a good chance of equalling the like period of 1957. You may have noted that the company has been buying some of its own shares. It has two hit



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to satisfy a natural desire and to fill a physiologic need
—PLEASANTLY

Each delicious foil wrapped nugget contains:

Vitamin A	5,000 U.S.P. Units	Biotin	30 mcg.
Vitamin D	1,000 U.S.P. Units	Rutin	12 mg.
Vitamin C	75 mg.	Calcium	50 mg.
Vitamin E	2 Int. Units	Boron	0.1 mg.
Vitamin B_1	2.5 mg.	Cobalt	0.1 mg.
Vitamin B_2	2.5 mg.	Fluorine	0.1 mg.
Vitamin B_6	1 mg.	Iodine	0.2 mg.
Vitamin B_{12} Activity	3 mcg.	Magnesium	3.0 mg.
Panthenol	5 mg.	Manganese	1.0 mg.
Nicotinamide	20 mg.	Molybdenum	1.0 mg.
Folic Acid	0.1 mg.	Potassium	2.5 mg.

DOSE: **ONE DELECTAVITE NUGGET DAILY** • SUPPLY: Box of 30 (one month's supply) • Box of 90 (three months' supply)

ONLY DELECTAVITES CAN BE CHEWED WITHOUT EVEN A TRACE OF VITAMIN FLAVOR!

WHITE LABORATORIES, INC., Kenilworth, N. J.

shows that have taken well with the public. The company is financially strong.

Q. ***So many things we buy in the grocery store are packed in containers. It occurs to me that there must be some good stocks in this industry. Will you comment on this?***

A. As a speculative play you may wish to examine the situation in National Can. Along with others it has been hurt by rising labor costs. This reduced its net last year even though it did a little better in sales. Its chance for improvement lies largely in the fact that start-up expenses it encountered last year in new plants will not be repeated this year. The results should show up in the earnings statement. Its new management appears to be aggressive.

Q. ***Are the prospects good for Pepsi Cola?***

A. Its sales are improving and it has extended its operations in foreign markets. This stock is a speculation but the dividend return is good and the long term prospects are sufficiently bright to warrant taking what is generally termed a business man's risk.

Q. ***Would you recommend the purchase of Fairbanks Morse?***

A. No. Why get into the middle of a squabble when it can be so easily avoided? Its business is a cyclical one and its operating record doesn't convince me I want any of its shares. If you wish to invest in the heavy industries, there are many other ways to do so that appear preferable.

Q. ***My family has a few shares of American Water Works. Do you consider this a sound investment?***

A. I do. It is in a stable industry and is well managed. An increase in the dividend is quite possible, and the return is good. This is the sort of stock that moves slowly but you can always sleep nights when you hold it. The family would be taking a justifiable risk by adding to its holdings.

MISSILE ERA HELPS AIRCRAFTS

Two forces are bringing relative stability to the aircraft industry, says "The Value Line Investment Survey." (1) The continuing "cold war" has kept our military spending at a high level and (2) as a result, the missile era is rapidly unfolding. "It is quite conceivable that, given another 3 or 4 years, missiles will consume larger defense expenditures than aircraft." The proportion of missile to total aircraft and missile expenditures for 1959 is estimated at 33 per cent. Indeed, current indications point toward missiles consuming an even larger percentage next year.

The change in government defense expenditure policy adds further stability to the aircraft industry. As the Survey remarks "Pre-Sputnik: A dollar limit was pre-determined . . . all defense requests that could not be compressed within that limit were refused. Post-Sputnik: Essential defense needs were ascertained and the necessary funds to meet them were asked for."

Sales of most aircraft companies in 1958, the Value Line Survey continues, will be lower than in 1957, due to the

ARREST THE ANXIETY FACTOR IN CARDIAC BREAKDOWN

without affecting autonomic function

- relieves anxiety and tension
- aids recovery from acute cardiac episodes
- makes patients more amenable to necessary limitations of activities
- does not interfere with other drug therapy
- does not mask toxicity of other drugs

Miltown® SUPPLIED: 400 mg. scored tablets, 200 mg. sugar-coated tablets.

2-methyl-2-n-propyl-1,3-propanediol dicarbamate

The original meprobamate, discovered and introduced by
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time lag between receipt of defense orders and actual deliveries. But a very heavy concentration of new business is in sight for the weeks remaining before the government fiscal year ends on June 30th. These will have little effect on sales and earnings until 1959, but the Value Line Investment Survey notes that the increased company backlogs of unfilled orders should be reflected in increased investor confidence in aircraft securities.

ONE IN SIX INVESTORS LIKES FUNDS

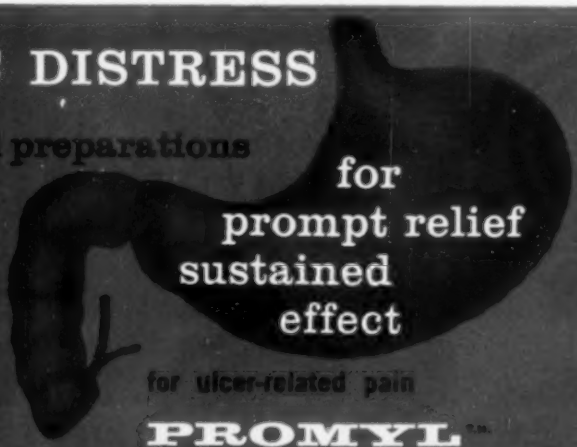
About one out of every six investors in U.S. industry uses shares of investment companies as part of his plan to attain long-range financial objectives such as retirement and future educational requirements, according to the National Association of Investment Companies.

Total net assets of the 168 members of the National Association of Investment Companies, both open-end investment companies (mutual funds) and closed-end companies, totaled $10,744,202,000 at the end of March, 1958. At the end of the previous quarter the figure was $9,924,459,000 and, a year ago, it was $10,440,620,000.

A recent study shows that 79 per cent of the composite portfolio of open-end investment companies is invested in common stocks. About 6 per cent is invested in preferred stock, 9 per cent in bonds and the remaining 6 per cent is held in cash.

IN GASTRIC DISTRESS

2 new, original preparations



for prompt relief sustained effect

for hyperacidity

TROPASIL

Two unique antacid elements provide prompt, sustained effectiveness. The new milk protein derivative, aluminum proteinate, is combined with the swift acid-neutralizing power of new aluminum magnesium hydroxycarbonate complex. In convenient, mildly flavored swallowable tablets, 1 or 2 t.i.d.

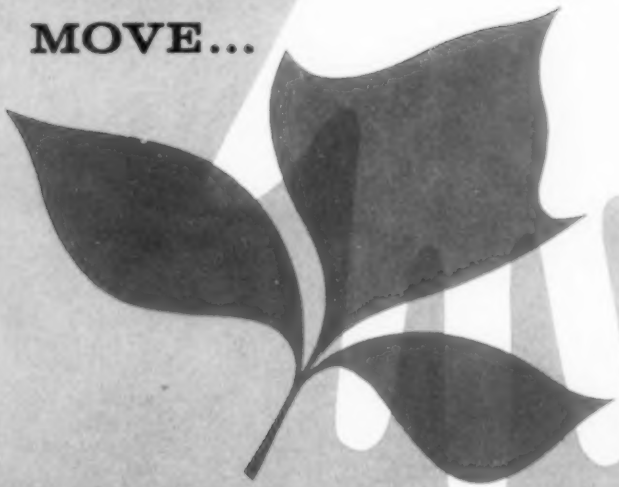
for ulcer-related pain

PROMYL™

The original Tropasil antacid formulation plus the potent cholinolytic, pipenzolate methylbromide, normalizes gastric secretion, reduces g.i. spasm and neutralizes excess acidity. In the presence of ulcer-related pain, 1 tablet q.i.d.

CROOKES-BARNES LABORATORIES, INC. Wayne, New Jersey

AFTER A FOOLISH MOVE...



A WISE ONE!

ZIRADRYL®

CREAM · LOTION

Benadryl® Hydrochloride with Zirconium

ZIRADRYL is compounded *specifically* for prevention and treatment of poison ivy and poison oak dermatitis. It controls local allergic reaction by relieving itching with Benadryl (diphenhydramine hydrochloride, Parke-Davis) and by neutralizing plant toxins with zirconium. Both the cream and the lotion are exceptionally cooling, soothing, and cosmetically appealing.

ZIRADRYL Cream is supplied in 1-ounce tubes.

ZIRADRYL Lotion is supplied in 6-ounce bottles.



MEDICAMENTA PER BALNEA

PARKE, DAVIS & COMPANY
DETROIT 32, MICHIGAN

"MEMORIES ARE MADE OF THIS . . ."

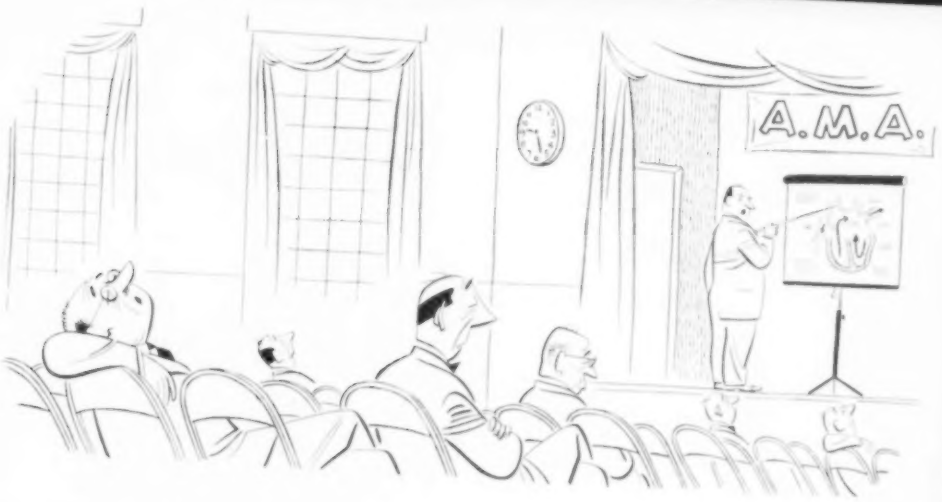




"Just other specialists as usual . . . No referrals here."



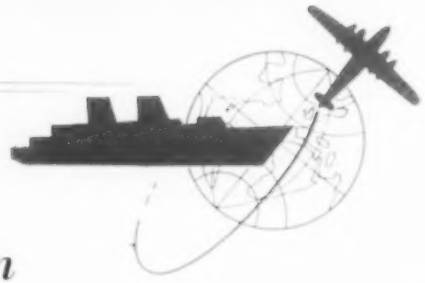
"Yes, dear, same old grind. A few more meetings and I'll be home."


A.M.A.


EL ROPO CIGARETTES
MEDICATED!
EXHIBITION DIRECTORY
PHARMACEUTICALS


WELCOME BEAUTICIANS
WELCOME A.M.A.
HOTEL LOUNGE

PRESCRIPTION FOR TRAVEL



Europe's Summer Season

In addition to traditional attractions, Europe this summer offers the vacationist two stellar "events of a lifetime"—each so centrally located that it can be fitted into almost any trans-atlantic itinerary.

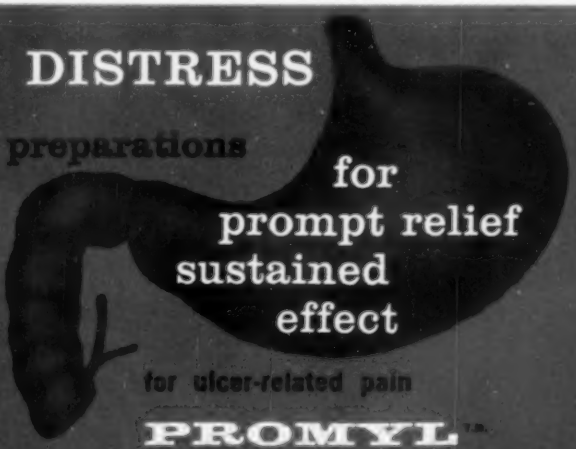
First of these is, of course, the "atomic age" World's Fair in Brussels which opened last April, the largest such exhibition ever held. The millions of sightseers who will stream through its turnstiles before it closes October 19 will be able to enjoy every type of entertainment from superb music, drama and film festivals to Disneyland-type amusements; from exotic pavilions, gardens and restaurants to breath-taking scientific exhibits.

Not the least of the attractions will be the intense cultural rivalry between the Soviet and U.S. participants, with

—Continued on page 128a

IN GASTRIC DISTRESS

2 new, original preparations



for prompt relief sustained effect

for hyperacidity

TROPASIL®

Two unique antacid elements provide prompt, sustained effectiveness. The new milk protein derivative, aluminum proteinate, is combined with the swift acid-neutralizing power of new aluminum magnesium hydroxycarbonate complex. In convenient, mildly flavored swallowable tablets, 1 or 2 t.i.d.

for ulcer-related pain

PROMYL™

The original Tropasil antacid formulation plus the potent cholinolytic, pipenzolate methylbromide, normalizes gastric secretion, reduces g.i. spasm and neutralizes excess acidity. In the presence of ulcer-related pain, 1 tablet q.i.d.

CROOKES-BARNES LABORATORIES, INC. Wayne, New Jersey

open the airway with new

'FEDRAZIL'® TABLETS



when colds or allergies
congest the respiratory tract

- decongest the **entire** respiratory tract mucosa
- dilate the bronchi
- provide potent **anti-allergic** action

DOSAGE: *Adults and Children over 8 years*– 1 or 2 tablets, three times daily.
Children 2-8 years – 1 tablet daily, or as required.

Each tablet contains: 'Sudafed'® brand Pseudoephedrine Hydrochloride, 30 mg.; 'Perazil'® brand Chlorcyclizine Hydrochloride, 25 mg. Bottles of 100, sugar-coated.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

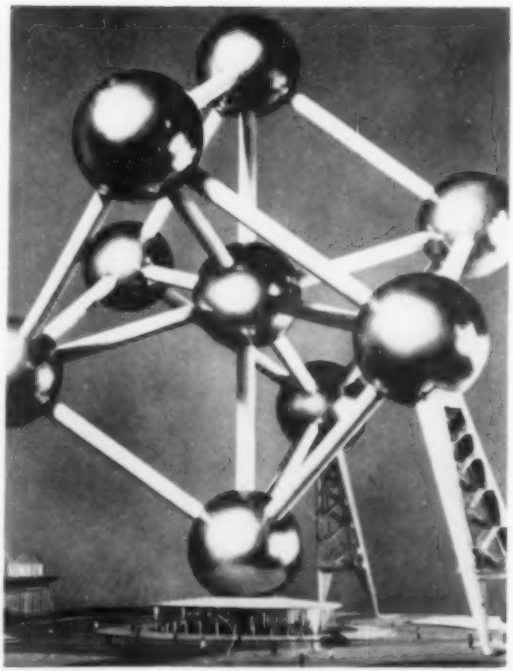
TRAVEL—continued from 126a

each side marshaling its brightest talent and most spectacular displays to win the favor of the Fair-goer.

Lourdes Rivaling the World's Fair as an international attraction of the first magnitude is the year-long Centennial Observance already underway at the famed Shrine of Our Lady of Lourdes, in France. Literally millions of travelers from all parts of the world are expected to visit the Basilica, the Grotto and the vast new underground Church of St. Pius X, which was specially built for the occasion and can accommodate 20,000 worshippers at one time.

Another inducement to the American traveler is the new Economy Class air fares, which went into effect April 1. According to reports, these cheaper rates have been enthusiastically received by the public.

—Continued on page 130a





The $20 million Atomium sets theme at the Brussels Fair. Photo (top) shows scale model. Right: Inside United States pavilion where a daily fashion show is held. Larger than Roman Colosseum, structure encloses 11 giant willow trees under fibreglass roof.

PSORIASIS



Proved Clinically Effective Oral Therapy —
maintenance regimen may keep patients lesion-free.

COMPLETE LITERATURE AND REPRINTS
UPON REQUEST. JUST SEND AN Rx BLANK.

LIPAN®

LIPAN Capsules contain: Specially prepared highly activated, desiccated and defatted *whole* Pancreas: Thiamin HCl, 1.5 mg. Vitamin D, 500 I.U.

Available: Bottles 180's, 500's.

Spirt & Co., Inc.
WATERBURY, CONN.

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In addition to the two big events already mentioned, European countries this year will offer a wide variety of music and drama festivals. Top talent from Broadway, Hollywood, the Metropolitan Opera and other U. S. cultural centers will join their European and Asian counterparts in performances at the World's Fair as well as at the famous music festivals from Bergen and Copenhagen to Athens and Granada.

Casals Festival Of particular interest is the brand-new "Festival Of The Two Worlds" featuring promising young talent from America and Europe, and organized by the gifted American composer Gian-Carlo Menotti. It will be held in the hill town of Spoleto, Italy, from June 5 to 29. Eagerly anticipated, too, is the resumption of the famed Pablo Casals Festival of chamber music—cancelled last year because of the illness of the maestro. Once again it will be held in the village church at Prades in the French Pyrenees. The dates: July 3-21.

FLEA MARKETS

There's many a bargain to be found in Europe's colorful "flea markets," according to the European Travel Commission. At these sprawling marts second-hand merchandise, valuable antiques and a thousand-and-one other items are crowded together in a fascinating jumble. Flea markets may be found in Madrid, Paris, London, Brussels and Rome. They are usually at their busiest on Sunday mornings.

Not all of Europe's coming attractions are of the long-hair variety. The 21 member countries of the European Travel Commission will offer every other type of diversion ranging from flower festivals to polar-bear-hunting safaris and from giant billion-dollar international trade fairs to sports car rallies. Man, woman or child . . . Europe this year will offer each tourist a wealth of things to do.

High Cuisine Europe's famed "high cuisine" may be enjoyed high in the sky at any number of lofty restaurants perched atop mountains, TV towers, office buildings, hotels, and even in the branches of trees! Tourists who delight in views with the viands will find these unusual dining spots scattered all the way from the North Cape to the Bay at Naples.

Topping the Brussels World's Fair site is the 320-foot-high theme structure, the Atomium, and topping this is a restaurant. Housed in the structure's highest sphere, it offers the finest Belgian cuisine and, through giant portholes, a spectacular panorama of the fair and city of Brussels.

After a busy morning of sightseeing around Paris, the tired visitor can get away from it all, or rather *above* it all, by repairing to the Eiffel Tower for a 60-mile, bird's eye view of the city and countryside from the 984-foot-high engineering marvel (1,014-feet including its TV antenna, and another 6-inches in summer when heat expands the metal).

When he's had his fill of the soul-satisfying vista, he can descend to somewhat lower altitudes for a fine yet lofty

—Continued on page 132a

GRADUMET TRAL is a new, long-acting, oral dosage form of Abbott's anticholinergic, TRAL. Tablet-shaped, the GRADUMET consists of physiologically inert plastic, containing hundreds of interstitial passages impregnated with the anticholinergic.

Unlike conventional tablets, the GRADUMET does not release all its TRAL at once; neither, as a long-release dose form, does it release the TRAL in timed "jolts," with sharp drop-offs in drug action in between.

Instead, a gradual, continuous leaching action takes place in the gastrointestinal tract, so that the TRAL is released at a constant, smooth rate over a period of from 8 to 12 hours. The exhausted GRADUMET is excreted unchanged, in the stool.

Thus, with GRADUMET TRAL, the patient receives anticholinergic therapy of high clinical efficiency—with an exceptionally low incidence of side effects—**in a dosage form that will often take him completely through the day—or the night—on a single dose.**

New GRADUMET TRAL, 50 mg., and GRADUMET TRAL, 50 mg., with Phenobarbital, 30 mg., are available at pharmacies everywhere, in bottles of 50 and 500. For details on either GRADUMET form, and literature, simply consult your Abbott representative.

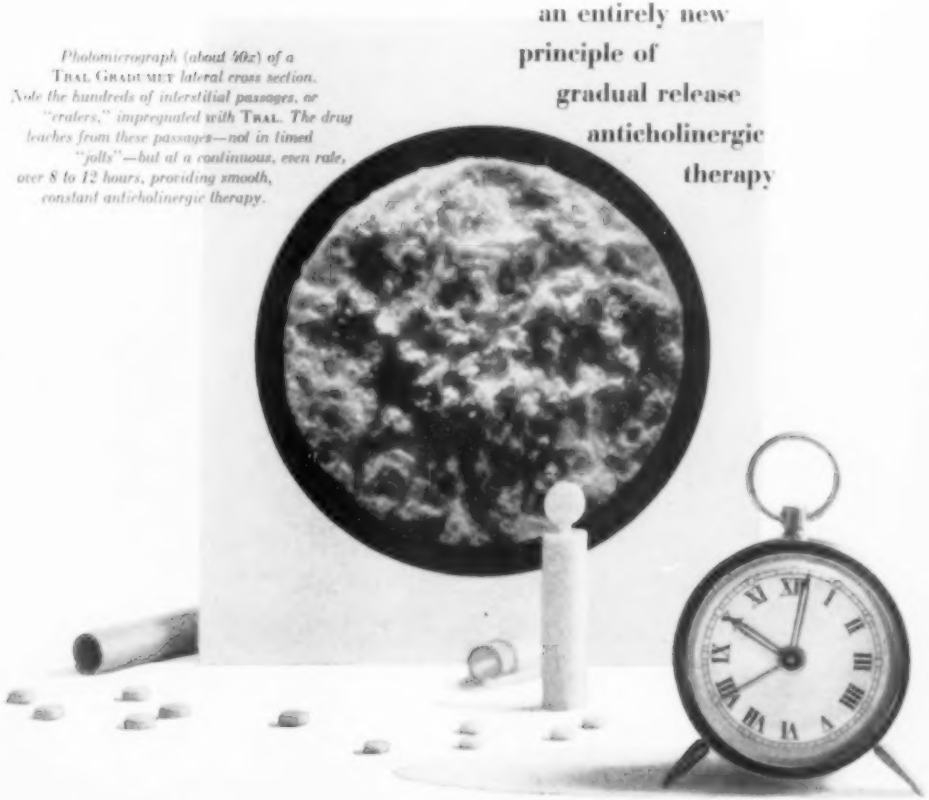
Abbott

GRADUMET® TRAL®

(HEXOCYCLIUM METHYLSULFATE, ABBOTT)

Announcing an entirely new principle of gradual release anticholinergic therapy

Photomicrograph (about 40x) of a TRAL GRADUMET *lateral cross section. Note the hundreds of interstitial passages, or "craters," impregnated with* TRAL. *The drug leaches from these passages—not in timed "jolts"—but at a continuous, even rate, over 8 to 12 hours, providing smooth, constant anticholinergic therapy.*



up to 12 hours' medication from a single dose

•GRADUMET—TRADEMARK FOR LONG-RELEASE DOSE FORM, ABBOTT; PATENT APPLIED FOR. 8010M3



Pan Am Airways

meal in the thoroughly French manner. Two restaurants, one at the 377-foot level, the other at the 187-foot level, tender luncheon with appropriate wines plus heady views of the Seine, Montmartre and the Place de la Concorde thrown in.

Another novel idea that will get the tourist off the ground, while dining that is, is a restaurant that actually perches in a tree—it's called Restaurant Robinson and the tree is in a forest near Paris.

Dining in Germany German technical achievement and pride in good eating have been combined in an ingenious manner in Stuttgart. There, a newly constructed concrete TV tower rises gracefully over 600 feet, the second highest structure in Western Europe (the Eiffel Tower is the highest). Near the top of the imposing structure is a restaurant where, glancing up from his beer, bratwurst and strudel, the diner can feast his eyes on the Alps—over 200 miles away.

There's nothing like a splendid meal to give one that top-of-the-world feeling and the Swiss can guarantee that feeling with their wonderful food or their imposing Alps—or both at once if you prefer. The Jungfraujoch, 11,333 feet up the Jungfrau Mountain and well into cloudland, boasts the highest cog-railway station in Switzerland and also

—Continued on page 136a

The Eiffel Tower, symbol of all things Parisian, has more to offer than a grueling climb and a bird's eye view of the city. It boasts of two restaurants—one at the 377-foot level and the other 187 feet above the ground.

coming...

a new antibiotic

...effective
even against
resistant staph

over please...

AVAILABLE SOON



a dramatically new

"STUBBORN SPECTRUM"

bactericidal

antibiotic

effective against a wide variety of recalcitrant organisms —even against resistant staph!

BRISTOL LABORATORIES INC.
SYRACUSE, NEW YORK

Watch for a forthcoming announcement!



more accurate diagnosis

THE NEW ALL-NEW BIRTCHER 300

SPEED ELECTROCARDIOGRAPH



FULL COLOR BROCHURE

Fill out the coupon or attach it to your prescription blank for our new full color brochure illustrating 19 engineering achievements found in the new Birtcher 300 Electrocardiograph. No obligation.

Tachycardia, encountered in children and frequently in the aged, makes electrocardiograms difficult or impossible to read. The double speed feature of the new Birtcher 300 Electrocardiograph makes reading these, and all other traces where a double magnification of the horizontal is desirable, more accurate. Dual speed is just one of 19 engineering achievements found in the Birtcher 300 . . . a result of more than 22 years devoted to the manufacture of the finest medical electronic equipment.

immediate delivery

THE BIRTCHER CORPORATION
Los Angeles 32, California

THE BIRTCHER CORPORATION Dept. MT-658
4371 Valley Blvd., Los Angeles 32, California

Send me descriptives detailing the engineering achievements in the new Birtcher 300 Electrocardiograph.

Dr. _____

Address _____

City _____ Zone ____ State _____

S-M-A expands



for the baby

S-M-A® FOOD FORMULA FOR INFANTS, WYETH

CONCENTRATED LIQUID • INSTANT POWDER

S-M-A protein is in physiologic proportion. The infant fed S-M-A receives a daily protein intake comparable to that of the breast-fed infant.

S-M-A fat is high in essential fatty acids. S-M-A supplies 20 calories per ounce, the same as human milk.

S-M-A provides *physiological* carbohydrate in the form of lactose in an amount (7%) closely adjusted to the average quantity in human milk.

S-M-A supplies vitamins and minerals in amounts adequate to meet the recognized needs of health and growth.

PHYSICIANS' COUNCIL FOR INFORMATION ON CHILD HEALTH

This advertisement conforms to the Code for Advertising of the Physicians' Council for Information on Child Health

S-M-A for sound infant nutrition . . .

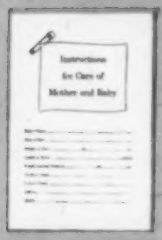
Wyeth

Philadelphia 1, Pa.

your baby-care resources

The S-M-A Service* (available only to physicians) includes vital information for expectant mothers. Not only does the service provide extensive infant-care information, but it also answers many questions about pre- and postnatal problems to supplement your instructions to the mother.

for the mother



A teaching aid on important points of care



Facts and pictures for the mother during pregnancy and her baby's first year of life



A personalized gift of S-M-A from you

for you, the physician



Authoritative discussions of nutritional requirements and infant-feeding problems



Rapid data for supplemental feeding

for the hospital



Baby-identification cards for the nursery

*Your Wyeth Territory Manager will gladly supply you, free of charge, with the *continuous* S-M-A Infant-Feeding Service for your obstetrical practice.

the famous Berghaus hotel-restaurant.

The Gornergrat Plateau, at 10,170 feet, is also reached by cog-railway and the traveler is rewarded by the breathtaking menu at the outdoor restaurant of the Kulm Hotel and the even more breathtaking perspective. A word of advice: those not used to high altitudes should go easy at the table since eyes are notoriously larger than stomachs in such cases.

The tourist who considers these staggering alpine altitudes somewhat unsettling but still wishes to dine high, wide and handsome, will find a delightful compromise in nearby Austria. About a half hour out of Vienna, on a 1500-foot mountain top, two renowned restaurants, the Kahlenberg and the Kobenzl, provide an impressive view of the Danube city. A memorable view of ancient Salzburg can be had via an elevator that whisks one through a tunnel cut out of solid rock to the 1770-foot-high, open-air Winkler—an excellent spot for coffee and liqueurs.

Equally enchanting—but in a remote setting of rugged grandeur—is a brand-new restaurant atop the 1000-foot summit of the North Cape. Here, during the summer months, tourists will be able to enjoy Midnight Sun Suppers in the middle of the night, while Old Sol shines brightly over the glittering expanse of the Arctic Ocean.

Neapolitan Highspot Southern Europe, too, has many eating spots where the viands vie with the view for the attention of the diner. For example, a mention of D'Angelo, high on the Posilipo Hill in Naples, to anyone who has dined there, will probably evoke enthusiastic recollections not only of Neapolitan dishes, but of the unforgettable sight at his feet—nighttime Naples and its bay spread out like a sparkling diadem on black velvet.

Similar images are shared by those who have feasted in quaint restaurants in the lofty village of Monte Faito at the end of a 3,000-foot funicular between Naples and Amalfi, or at the Canzone del Cielo (Song of the Sky) in Anacapri, with its commanding view of the rocky

—Continued on page 139a

GERMAN MUSEUMS

Of interest to the physician-tourist are two special museums in West Germany. The new German Dispensary Museum at Heidelberg displays ancient and modern medical instruments and medicines, while the Blade Museum at Solingen, Germany's famous cutlery center, enables the visitor to see the evolution of weapons, cutlery and many other types of cutting tools.

TO OUR READERS: You are avid travelers—as statistics show—taking trips for pleasure and relaxation as well as to attend professional meetings in this country and abroad. In addition, you often prescribe travel for your patients. Thus, the purpose of this department is to give you concise, practical information about one of your strong interests—travel. As a special service, this section will carry each month a calendar of important forthcoming national and international medical meetings.

RIASOL



for Summer Comfort in PSORIASIS

The hot, sweltering days of summer frequently add to the general discomfort of the psoriasis sufferer. At this season your prescription for RIASOL will be doubly welcome.

RIASOL's unique formula has met with outstanding success in psoriasis. In most cases the unsightly lesions yield promptly to its effective action and often do not recur for long periods. Itching, if present, is usually alleviated.

Even the most fastidious patient welcomes RIASOL. It is simple and easy to apply, does not stain and no bandages are required.

RIASOL* contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. After one week, adjust to patient's progress.

RIASOL is supplied in 4 and 8 fld. oz. bottles at pharmacies or direct.

*T.M. Reg. U. S. Pat. Off.



BEFORE USE OF RIASOL



AFTER USE OF RIASOL



Test RIASOL Yourself

May we send you professional literature and generous clinical package of RIASOL. No obligation. Write

SHIELD LABORATORIES

Dept. MT-658 12850 Mansfield Avenue, Detroit 27, Michigan

RIASOL FOR PSORIASIS



PENETRATES*



SOFTENS FECES



ADDS FORMED BULK



EASES EVACUATION

*Unique encapsulation of millions of minute oil globules by Irish moss assures complete penetrant diffusion in stools.

IN CONSTIPATION

TO SOFTEN STOOLS WITHOUT TISSUE DEHYDRATION AND MAKE THEM MOVE WITHOUT STRAINING

KONDREMUL®

COLLOIDAL EMULSION OF MINERAL OIL AND IRISH MOSS patch

PROVEN SAFE...EFFECTIVE • IN PREGNANCY • IN CHILDHOOD • IN MIDDLE-AGED PATIENTS • IN ELDERLY PATIENTS • **THROUGH MORE THAN 25 YEARS OF USE**

AVAILABLE in three pleasant-tasting formulas:

for the average patient
KONDREMUL (Plain)
containing 55% mineral oil. Bottles of 1 pint.

for more hypotonic cases
KONDREMUL WITH CASCARA
0.66 Gm. non-bitter Ext. Cascara per tablespoonful.
Bottles of 14 fl.oz.

for more resistant constipation
KONDREMUL WITH PHENOLPHTALEIN
0.13 Gm. (2.2 gr.) phenolphthalein per tablespoonful.
Bottles of 1 pint.

patch **THE E. L. PATCH COMPANY** Stoneham, Massachusetts

70 YEARS OF SERVICE TO THE MEDICAL PROFESSION

island and the blue Mediterranean.

Vantage points for viewing lovely Lisbon are the summits of its seven hills and this can be done most advantageously, and enjoyably, while taking a repast at one of three highly placed restaurants, each with a somewhat different aspect: the sumptuous rooftop restaurant of the Hotel Tivoli with its glass-enclosed and open terrace sections; a comparable one atop the Hotel Ambassador; the "A Quinta" restaurant at the top of the public elevator that connects the lower and upper city.

More appreciative glances than rain fall on the plain in Spain—thanks to the magnificent view enjoyed by diners at the fashionable Mirador de Castilla (Lookout of Castille) restaurant atop the Edificio Espana, Madrid's 25-floor skyscraper.

Farther east, in the environs of Barcelona, 1745-foot Mt. Tibidabo beckons with dual attractions—inspiring view and inspired cuisine. The highly reputed inn at the summit is accessible by motor car or mountain railway.

Bargains Dollar-conscious tourists returning by air to the United States will find many a "best buy" this year at Europe's four tax-free airport shops.

Located at Shannon (Ireland), Schipol (The Netherlands), Orly (Paris) and Kastrup (Copenhagen), they are ideal spots for picking up personal items and last-minute gifts before boarding the plane for home. Prices generally are about half those in the U. S. and are usually well below the levels of Europe's retail shops.

The tax-free shopping centers at Shan-

—Continued on page 142a





NEW 3-WAY "PICKUP"
FOR APPREHENSIVE AND/OR
HYPERTENSIVE PATIENTS

NEO-SLOWTEN®
patch

A TRANQUILIZING COMBINATION

- relieves anxiety, irritation, fatigue
- reduces mild elevated blood pressure
- refreshes neural tone

EACH WHITE, SCORED TABLET CONTAINS:
Phenobarbital . . . . . 16.2 mg. (¼ gr.)
Warning: May be habit-forming.
Reserpine . . . . . 0.1 mg.
Thiamine hydrochloride . . . . . 5.0 mg.

SUPPLIED: Bottles of 100 scored tablets.

patch THE E. L. PATCH COMPANY
Stoneham, Massachusetts

70 YEARS OF SERVICE TO THE MEDICAL PROFESSION

Trīva relieves vaginitis symptoms... in a matter of minutes!

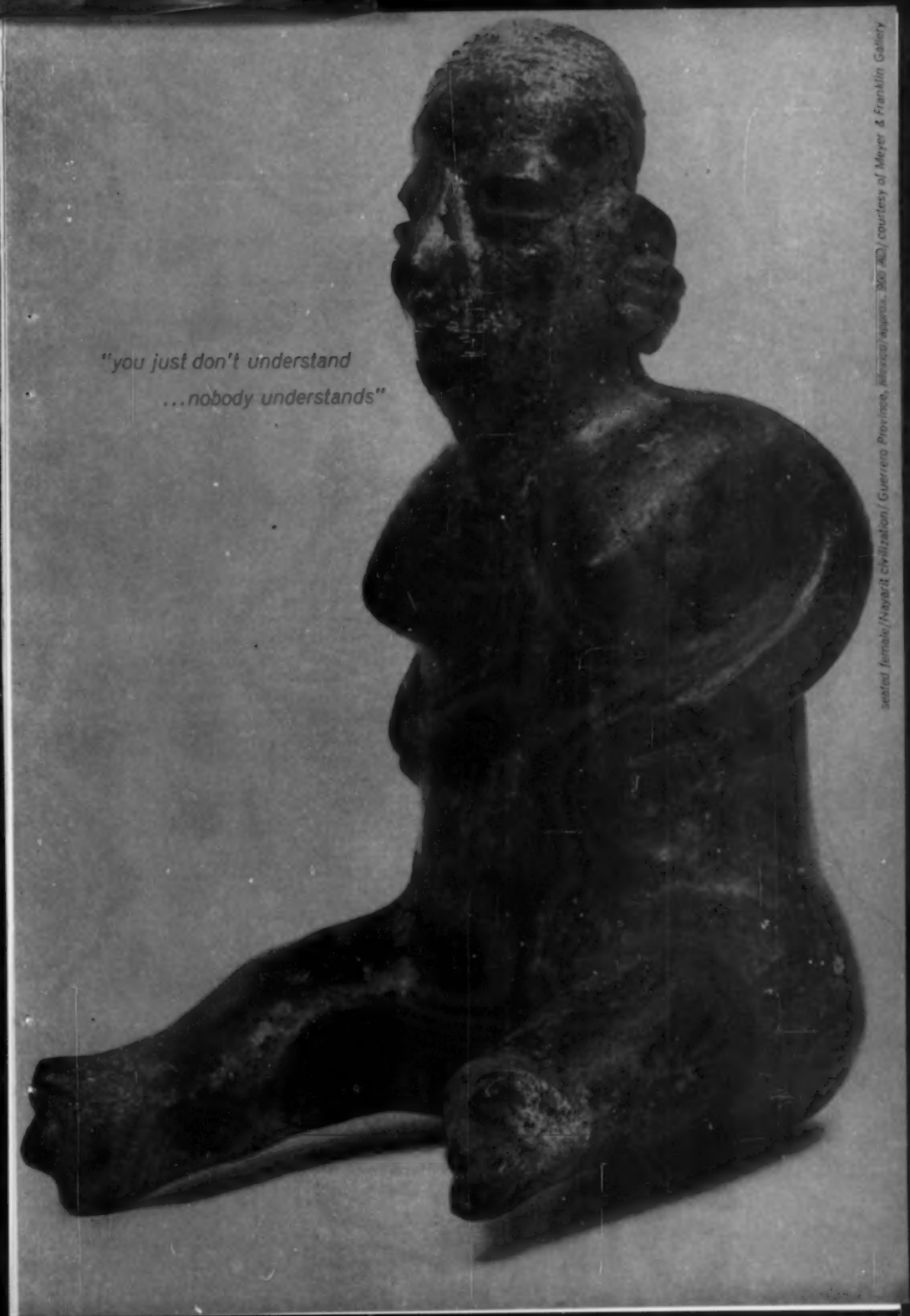
Over 358,997 cases of vaginitis in the past 5 years have been treated with Triva. Reports and increasing use of Triva point to this important fact: almost immediate relief from vaginitis symptoms proves Triva is a most dependable and effective treatment...

Most cases of trichomonal and non-specific vaginitis are rendered organism-free within 12 days. (Monilia genus may require longer.) Simple to prescribe: "Triva (Boyle) sig: douche, b.i.d. for 12 days."

Available at all pharmacies in convenient packages of 24 individual 3 Gm. packets, each containing 35% Alkyl Aryl sulfonate (wetting agent and detergent), .5% Disodium ethylene bis-iminodiacetate (chelating agent), 53% Sodium sulphate, 2% Oxyquinoline sulfate and 9.5% dispersant.

BOYLE & COMPANY

LOS ANGELES 54, CALIFORNIA



"you just don't understand
...nobody understands"

seated female/Nayarit civilization/Guerrero Province, Mexico/approx. 300 AD/courtesy of Meyer & Franklin Gallery

TRAVEL—continued from 139a

non and Schipol contain a wide range of merchandise such as cameras, watches, liquors, sporting goods, briar pipes, ceramics, silverware and candy. The one at Orly specializes in perfumes and liquors only, while that at Kastrup features liquors, cigars and cigarettes.

Prices Typical prices, according to the European Travel Commission, are: brand-new Rolleiflex cameras with built-in light meters: $171; men's Omega self-winding Seamaster watches, $67; fine-quality Scotch whisky, about $2.10; U. S. cigarettes, $1.50 per carton.

In addition, the Shannon Free Airport offers a unique custom tailoring service. Air travelers calling there on eastbound flights may be measured for sports jackets, slacks, suits or topcoats of fine hand-woven Irish woolens—then pick up the finished garments on their way home.

EUROPEAN TIPSHEET

A new "tipsheet" for transatlantic tourists has been issued by the European Travel Commission. Entitled "Europe—Major Events," the ten-page folder lists a wide variety of outstanding coming attractions in the Commission's 21 member countries. Copies may be obtained free of charge from travel agents throughout the United States. The new folder lists dates and locations for such varied attractions as the Brussels World's Fair and the Lourdes Centennial plus numerous folk fetes, music festivals, auto races, flower exhibitions, religious celebrations and wine festivals. Also listed are a scattering of offbeat attractions. These include Norwegian polar-bear-hunting safaris, a Swiss yodeling festival, Danish medieval tilting tournaments and a Portuguese "housewives' parade."

MEDICAL TIMES

Calendar of Meetings

July

Stockholm, Sweden: American College of Surgeons, Regional Meeting, July 2-7. *Contact:* Dr. Michael L. Mason, 40 E. Erie St., Chicago, Ill.

London, England: International Cancer Congress, July 6-12. *Contact:* Secretary-General, 7th International Cancer Congress, 45, Lincoln's Inn Fields, London, W. C. 2, England.

Birmingham, England: British Medical Association, July 10-18. *Contact:* The Secretary, British Medical Association, Tavistock Square, London, W. C. 1, England.

London, England: British Tuberculosis Association, July 1-4. *Contact:* Secretary-General, National Association for the Prevention of Tuberculosis, Tavistock Square, London W. C. 1, England.

—continued on page 144a

Now *1* R

for
2-dimensional
menopausal
therapy



manages both the psychic and somatic symptoms
relieves emotional stress in the menopause
and *treats* somatic disturbances due to ovarian decline

Milprem*

MILTOWN® A PROVEN TRANQUILIZER + CONJUGATED ESTROGENS (EQUINE) A PROVEN ESTROGEN

SUPPLIED: Bottles of 60 tablets.

EACH TABLET CONTAINS: Miltown® (meprobamate, Wallace) ..... 400 mg.
2-methyl-2-n-propyl-1,3-propanediol dicarbamate
Conjugated Estrogens (equine) ..... 0.4 mg.

DOSAGE: One tablet t.i.d. in 21-day courses with one week rest periods. Should be adjusted to individual requirements.

Literature and samples on request.

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WALLACE LABORATORIES, *New Brunswick, N.J.*

CMP-6670-00

London, England: Congress of Medical Women's International Association, July 15-21. *Contact:* Dr. Janet Aitken, 30 a Acacia Rd., London, N. W. 8, England.

London, England: International Union of Biological Sciences, July 16-23. *Contact:* Chairman, Division of Biology and Agriculture, National Research Council, 2101 Constitution Ave., N. W., Washington 25, D. C.

August

Montreal, Canada: International Congress of Genetics, August 20-27. *Contact:* Mr. J. W. Boyes, Chairman, Department of Genetics, McGill University, Montreal 2, Quebec, Canada.

Stockholm, Sweden: International Congress of Microbiology, August 4-9. *Contact:* Dr. C. G. Heden, Bakteriologiska Institutionen, Karolinska Institutet, Stockholm, Sweden.

Copenhagen, Denmark: World Federation of Occupational Therapists, August 11-16. *Contact:* Annemarie Gjetting, Upsalagade 7,5.S., Copenhagen, Denmark.

Copenhagen, Denmark: World Medical Association, August 15-20. *Contact:* Dr. Louis H. Bauer, 10 Columbus Circle, New York 19, N. Y.

September

Venice, Italy: International Congress of Angiology and Histopathology, Sep-

—Concluded on page 148a



SAFER
SIGMOL® ENEMA

sodium-free, non-irritating . . . SAFE, even for routine use with patients on low-sodium regimen. **SIGMOL Enema** is used routinely in hospitals across the nation because it is quick, effective, and **SAFE.** Sigmol Enema contains, in each 120 cc. (4 fluid oz.), Sorbitol Solution, N.F. 43 Gm., Dioctyl Potassium Sulfosuccinate 0.12 Gm. Available at ethical prescription pharmacies. Write for your supply of handy patient instruction sheets.



Pharmaseal Laboratories, Glendale 1, California
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PHARMASEAL® *leader in enema research and therapy*

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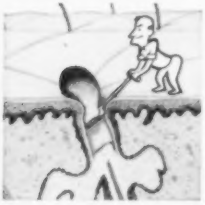
IN ACNE

Fostex® degreases the skin and helps remove blackheads



Fostex contains a combination of surface active agents (Sebulytic*) which:

◂ Completely emulsify excess oil so that it is quickly washed off the skin.



◂ Penetrate and soften comedones, unblocking the pores and facilitating removal of sebum plugs.



Fostex dries and peels the skin

◂ The Sebulytic base of Fostex dries and promotes peeling of the skin . . . actions enhanced by the keratolytic effects of micropulverized sulfur and salicylic acid.

*(Sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate, sodium dioctyl sulfosuccinate.)

FOSTEX CREAM for therapeutic washing of skin in the initial phase of acne treatment, when maximum degreasing and peeling are desired.

FOSTEX CAKE for maintenance therapy to keep skin dry and substantially free of comedones.

Fostex is easy for your patients to use

◂ Patients stop using soap on affected skin areas. Instead they use Fostex for therapeutic washing of the skin. The Fostex lather is massaged into the skin for 5 minutes—then rinse and dry.

Write for samples

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You can control tremor

In parkinsonism Parsidol has proved outstandingly effective for controlling tremor and muscular rigidity, the principal impairments in this disease.[1, 2]

With Parsidol most patients show rapid, even dramatic improvement—both in major symptoms and in gait, posture, balance and speech. Side effects are minimal. Parsidol is compatible with all other antiparkinsonian drugs and its effectiveness may even be increased in combination or rotation with such preparations as atropine and dextroamphetamine.[3] Parsidol improves the patient's emotional perspective, promotes a more optimistic outlook as physical coordination and dexterity return.

Most patients can be controlled with a maintenance dosage of 50 mg. four times daily. However, more severe cases may require up to 600 mg. daily, a dosage level ordinarily well tolerated.

References: 1. Doshay, L. J.; Constable, K. and Agate, F. J., Jr.: J.A.M.A. *160*:348 (Feb.) 1956. 2. Bertis, H. J.: Lancet *74*:245 (July) 1954. 3. Timberlake, W. H. and Schwab, R. S.: N. Eng. J. Med. *247*:98 (July 17) 1952.

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Brand of ethopropazine hydrochloride

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tember 24-27. *Contact:* Dr. K. Gerson, 4 Rue Pasquier, Paris 8e, France.

Vienna, Austria: International Congress of Biochemistry, September 1-6. *Contact:* Dr. O. Hoffmann-Ostenhof, Währingerstrasse, 42, Vienna 9, Austria.

Beirut, Lebanon: International Congress of Hydatid Diseases, September 20-22. *Contact:* Dr. Elias Sader, Rue Ibrahim Al Ahdab, Beirut, Lebanon.

Brussels, Belgium: International Congress of Ophthalmology, Brussels, Belgium, September 8-12. *Contact:* Prof. Jules Francois, 15 Place de Smet-de-Maeyer, Ghent, Belgium.

Lisbon, Portugal: International Congress of Tropical Medicine and Malaria, September 5-13. *Contact:* Prof. Manuel R. Pinto, Instituto de Medicina Tropical, Lisbon, Portugal.

Brussels, Belgium: World Congress of Cardiology, September 14-21. *Contact:* Dr. F. Van Doren, 80 Rue Mercelis, Brussels, Belgium.

October

Padova, Italy: Congress of the International Society of Audiology, October 2-5. *Contact:* Prof. M. Arslan, 37 via Altinate, Padova, Italy.

Essen, Germany: International Convention on Nutrition and Vital Substances, October 8-12. *Contact:* The Secretariat, Bemeroderstrasse 61, Hanover-Kirchrode, Germany.

Paris, France: International Congress on Allergology, October 19-26. *Contact:* Dr. B. N. Halpern, 197 Boulevard St. Germain, Paris 7, France.

Madrid, Spain: International Congress of Medical Hydrology, October 19-26. *Contact:* Dr. Francon, 55 Rue des Mathurins, Paris 8, France.

November

Lima, Peru: Pan American Congress of Radiology, November 2-7. *Contact:* Dr. Vincente Ubillus, 530 Avenue Saena Pena, Calloa, Peru.

THE DOCTOR SPEAKS . . .

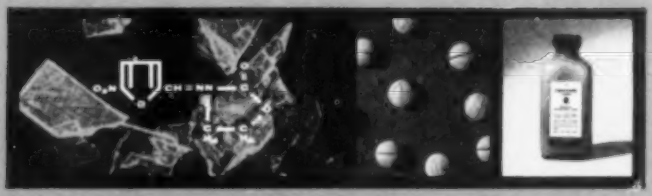
Especially designed to aid physicians in history-taking and examination of foreign-born patients, an easy-to-use, compact booklet covering medical phrases, terms and questions in six foreign languages is currently available. Combining a series of language articles (French, German, Italian, Polish, Spanish and Yiddish) published in MEDICAL TIMES, the handy booklet may be purchased at cost (single copy: one dollar). Supply limited. Address: MEDICAL TIMES, Reprint Department, 1447 Northern Blvd., Manhasset, L. I., New York.

new... wide-range nitrofuran

controls the "problem pathogens" of

bacterial diarrheas and enteritis

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FUROXONE LIQUID

A finely divided suspension containing Furoxone, 50 mg. per 15 cc., with kaolin and pectin for added demulcent and adsorptive effect ▪ Pleasant orange-mint flavor ▪ For patients of all ages (may be mixed with infant formulas; passes through a standard nursing nipple)

▪ Supplied in bottles of 240 cc.

FUROXONE TABLETS

Scored brown tablets containing Furoxone, 100 mg.

▪ Supplied in bottles of 20 and 100 tablets.

▪ **Perorally effective against a wide range of enteric bacteria[1,2]—including common pathogenic species and strains of Escherichia, Salmonella and Staphylococcus not adequately controlled by antibiotics and sulfonamides.** ▪ **Bactericidal rather than bacteriostatic.**

▪ **Does not induce development of significant bacterial resistance, nor predispose to monilial or staphylococcal overgrowth.**

▪ **No toxicity reported.[1]**

▪ **Side effects infrequent. Mild sensitization (rash), nausea or emesis may occur occasionally.**

1. Ponce de Leon, E.: Antibiotic Med. & Clin. Therapy 4:816, 1957.

2. McFaddin, H. W. and Musselman, M. M.: Personal communication to Eaton Laboratories.

NITROFURANS—A unique class of antimicrobials

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urised®

Attacks the Cause
Alleviates Pain
Arrests Infection

Patients—in all age groups—respond readily to the 3 "A"s of URISED. It is effective in virtually all forms of urinary disturbances—even those complicated by serious systemic disease.[1]

ATTACKS THE CAUSE—In minutes, URISED attacks both primary causes of pain and dysfunction: (1) smooth muscle spasm; (2) incidence of infection.

ALLEVIATES PAIN—Prompt antispasmodic action relaxes painful smooth muscle along the urinary tract, brings quick relief to the distressed patient.

ARRESTS INFECTION—Rapid antibacterial action reduces irritation, even overcomes infections previously resistant to antibiotics and sulfonamides.

Prescribe URISED with confidence to relieve frequency, burning, urgency, dysuria, promote rapid restoration of normal urinary function in all urinary affections of all age groups.

1. Strauss, B., Clin. Med., Vol. IV, No. 3, 1967

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a delicious table spread

a versatile kitchen shortening



its high corn oil content will not elevate blood cholesterol levels

In Emdee Margarine, 80% of the fat content consists of nonhydrogenated corn oil which has been specially processed to preserve its original content of unsaturated fatty acids. Each 100 Gm. provides 34 Gm. of linoleic acid and 18 Gm. of other unsaturated fatty acids.

Daily use of Emdee Margarine instead of customary table spreads and cooking fats puts a safety factor in the diet... assures patient acceptance... provides a liberal intake of the *unsaturated* fatty acids believed essential in metabolism and important in control of blood cholesterol levels.

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Available only from retail and hospital pharmacies.

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MODERN THERAPEUTICS

Preludin as a Euphoriant

The effect of Preludin as a euphoriant was investigated in ten student volunteers at the Charing Cross Hospital in London. The dosage of 25 mg., taken in the morning, was later raised to 50 mg. Palpitations, anorexia, relative insomnia, perspiration, restlessness, irritability, and difficulty in concentration were reported. Following this trial in normal subjects, a clinical trial was conducted in the psychiatric out-patient departments of four general hospitals. One hundred forty-seven patients with mild depressive and psychoneurotic conditions were given Preludin in dosage of 25 mg. at 8 A.M. and noon. In addition to anorexia, there were complaints of excitement, palpitations, insomnia, trembling, dryness of the mouth, abdominal pain, and subjective sensations of increased energy. Of the 147 patients in the group, 59.2 per cent appeared to be improved; 11.5 per cent did not respond, and 29.3 per cent complained of symptoms which indicated that they had been adversely affected by the drug. Of 33 patients suffering from hysteria, 17 were improved. The stimulant effect of Preludin produced an increase of tension in the patients diagnosed as suffer-

—Continued on page 156a

TABLET

Cantil

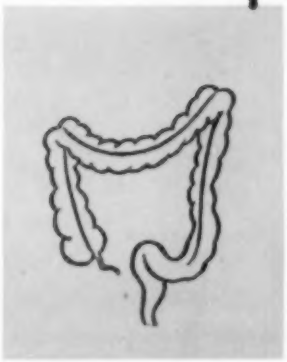
plain or with phenobarbital

for the colon

COLON DISORDERS "...the most effective available colonic anticholinergic drug."[1]

"...relieves or reduces diarrhea, distention and pain...."[2]

remedial action where you want it....





UPPER G.I. SYMPTOMS—cholinolytic of choice in a variety of conditions.[3]

Rapidly and dramatically effective in pylorospasm, biliary dyskinesia, peptic ulcer, hiatus hernia, chronic pancreatitis.[3]

CANTIL and TRIDAL give relief with unusual freedom from urinary retention, blurred vision, dry mouth.[2,3]

See complete description in 1958 P.D.R.

(1) Kleckner, M. S., Jr.: J. Louisiana M. Soc. 108:339, 1956. (2) Riese, J. A.: Am. J. Gastroenterol. 28:541, 1957. (3) Settel, E.: J. Am. Geriatrics Soc., in press.

TABLET

Tridal

(DACTIL + PIPTAL in one tablet)

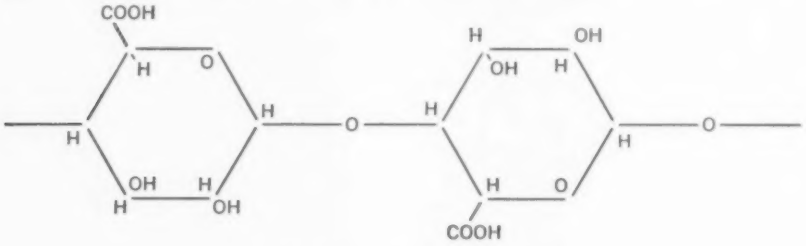
prompt, prolonged relief

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The Role of Citrus Pectin in Detoxication

A therapeutic agent of choice for over 20 years

PECTIN N.F., a natural hydrophilic colloid, has the property of conjugating toxins and enhancing the physiologic function of the digestive tract through its physical, chemical and anti-bacterial properties. The molecular structure of PECTIN consists of partially esterified polygalacturonic acid. The molecular weight of PECTIN is 100,000 to 250,000.



POLYGALACTURONIC ACID

(x-range 75–200)

Molecular weight of the anhydro-galacturonic acid unit (one-half of the above formula) is 176

In brief, Exchange Brand PECTIN N. F.—

Increases bulk and fluid retention of upper intestinal contents and imparts a smooth, gelatinous consistency.

Lubricates the intestinal wall.

Promotes normal peristalsis without mechanical irritation.

Reduces intestinal pH.

Inhibits growth of many putrefactive and otherwise undesirable microorganisms in the intestines without affecting normal flora.

Promotes assimilation of essential nutrients.

Helps to conjugate and eliminate toxins.

Reduces toxic side effects of therapeutic agents.

Exchange Citrus Pectin and Pectin Derivatives widely used in therapeutic specialties include:

PECTIN N.F.
PECTIN CELLULOSE COMPLEX
POLYGALACTURONIC ACID
GALACTURONIC ACID

They are available to the medical profession in specialties of leading pharmaceutical manufacturers.

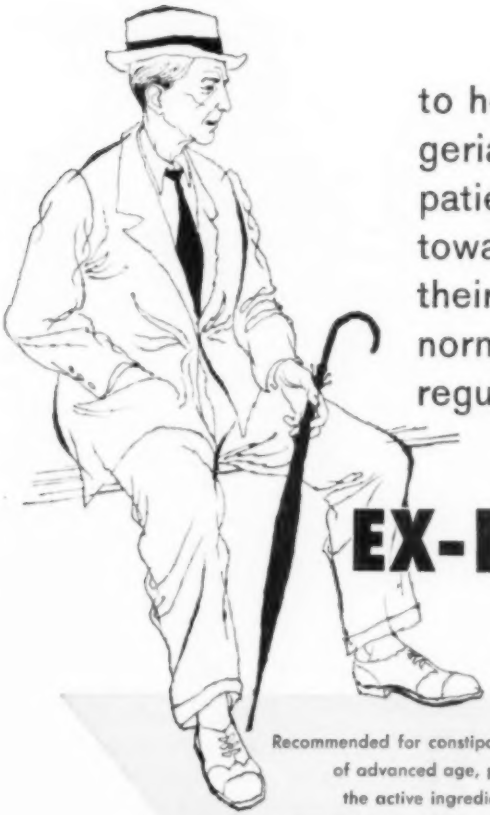
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. . . first in research to identify and make available the physiologically-active components of citrus fruits.



to help geriatric patients toward their normal regularity

EX-LAX

Recommended for constipated patients of advanced age, phenolphthalein, the active ingredient of Ex-Lax, acts gently, overnight . . . "in the morning produces a stool very much like normal"[1] . . . continues to act as a "mild aperient for several days,"[2] lessening need for frequent medication. No "adverse effects, such as tissue irritation, toxic symptoms or interference with the normal physiological functions"[3] were observed by isotope research.

PALATABLE

EFFECTIVE

WELL-TOLERATED

1. H. Beckman: Treatment in General Practice, W. B. Saunders Co., 1946; p. 478. 2. A. Grollman: Pharmacology and Therapeutics. Lea & Febiger, 1954; p. 391. 3. W. J. Visek, W. C. Liu, L. J. Roth: Studies on the Fate of Carbon-14 Labeled Phenolphthalein. Jour. Pharmacol. and Exp. Therapeutics, July 1956; 117:347.

—Continued from page 152a

ing from an anxiety state. Obsessional patients were improved in nine of 13 cases treated, as were a few patients with personality disorders. Amphetamine, known as a stimulant drug in psychiatry, has found widespread application. According to the authors, this trial seems to show that the effects of Preludin are similar to those of amphetamine, and that the former should be classified under the same pharmaceutical schedule.

JOHN B. RANDELL

British Medical Journal, 2:508, 1957

Menstrual Disorders Treated with Large-dose Oral Progesterone

Realizing that for many years it was believed that progesterone if taken orally would be physiologically inactive, the author and his co-workers at the Jewish Hospital of Brooklyn made a study of the endometrial effect of large oral doses of the drug when given to patients with amenorrhea. Progesterone has been used vaginally, and there is evidence of absorption and metabolic effect on the endometrium by this route. Of the 23 patients in the group studied, 14 had secondary amenorrhea, six had menopausal amenorrhea, and three had been castrated by removal of both ovaries but not the uterus. Patients were given cyclic therapy consisting of priming doses of estrogen followed by progesterone by mouth for five days. The amount of progesterone varied from 250 mg. daily to 1,000 mg. daily for the five-day period. At the start of withdrawal bleeding, an endometrial biopsy was performed. In the group, 65 biopsies were taken following therapy, and 47 showed secretory changes. Withdrawal bleeding followed progesterone administration in from three to five days in all patients. In 17 of the patients, progestational or secretory enometrium of some degree was produced. With the daily amount of 500 mg. one-third of the patients showed secretory changes; 750 or 1,000 mg. of progesterone daily produced secretory changes in three-fourths of the group. A number of patients with menstrual disorders were given cyclic therapy consisting of 0.05 mg. of ethinyl estradiol once daily for 20 days, followed by 750 mg. of progesterone daily for five days given orally. Treatment lasted for three months. Thirty-two of the 35 patients showed clinical improvement. The authors state that progesterone given orally to patients with amenorrhea will convert the endometrium previously primed with estrogen to a progestational pattern in approximately three fourths of the cycles, provided a sufficiently large dose is administered. In the cyclic estrogen-progesterone therapy of patients with various menstrual disorders, orally administered progesterone in sufficiently large doses may be substituted for parenterally administered progesterone with consistently good results.

C. H. BIRNBERG

Obstetrics and Gynecology, 11:115, 1958

Diabetes Mellitus Treated with Tolbutamide

The author and his associates have given a general evaluation of Tolbutamide, an orally administered antidiabetic drug used by them for a period of one and one-half years, intending it to aid the general practitioner in deciding which patients are suitable for oral

—Continued on page 160a

When building
for the future



write **Vi-Penta.#1** *for the first few days of life*

Vi-Penta No. 1 – vitamins K, E and C, needed especially by prematures and newborns

write **Vi-Penta.#2** *for infants and young children*

Vi-Penta No. 2 provides an optimal supply of vitamins A, D, C and E, especially important for normal development

write **Vi-Penta.#3** *for children of all ages*

Vi-Penta No. 3 provides A, D, C and 5 B-complex vitamins to meet the increased nutritional demands of growing years

For dosage and supply information refer to PDR page 763.

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ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc
Nutley 10, New Jersey

high blood levels, reliable blood levels

CYCLA

Triacetyloleandomycin, Wyeth

Effective against many organisms resistant to other agents

Effective against many common infections of everyday practice

Acid-resistant, readily absorbed, effectively utilized

Reliable blood levels—rapid, high, sustained

Low incidence and minimal severity of sensitivity and toxic reactions

Wyeth

Philadelphia 1, Pa

CYCLAMYCIN is a new, orally effective antibiotic derivative. Clinical trials demonstrate extensive applications in treatment and specific usefulness in problems of antibiotic resistance and reactions.

The CYCLAMYCIN antimicrobial spectrum encompasses most gram-positive and some gram-negative bacteria. It is effective in many infections caused by organisms resistant to erythromycin, the tetracyclines, penicillin, and streptomycin. It is particularly useful against many resistant strains of staphylococci in hospital populations.

MYCIN*

CAPSULES • ORAL SUSPENSION

CYCLAMYCIN is notably well-tolerated. Clinical experience shows a low incidence and minimal severity of sensitivity or untoward reactions. This is an advantage of pronounced importance for patients with a history of toxicity or hypersensitivity to other agents.

Favorable response to CYCLAMYCIN has followed its use in a wide variety of both minor and serious infections. These conditions include:

Staphylococcal infections: Abscesses, infected cysts, impetigo, infected ulcers and wounds, furuncles, carbuncles, cellulitis, urinary-tract infections.

Streptococcal infections: Streptococcal pneumonia, cellulitis, tonsillitis, pharyngitis, infections of traumatic and surgical wounds, urinary-tract infections.

Pneumococcal infections: Lobar pneumonia, bronchial pneumonia.

Haemophilus influenzae infections: Pneumonia.

Supplied: Capsules, 125 mg. (gray and yellow) and 250 mg. (black and yellow), vials of 16. Oral Suspension (cherry-raspberry flavored), 125 mg. per 5-cc. teaspoonful, bottles of 2 fl. oz. Also available: Oleandomycin Phosphate, Wyeth, for intravenous administration—as a dry powder for reconstitution; each vial contains 500 mg. of oleandomycin base as the phosphate salt.

*Trademark

—Continued from page 156a

therapy according to the evaluation. Tolbutamide appears to be most effective in persons over 40 years of age; it should not be given to children. Neither should it be given to patients receiving more than 40 units of insulin a day, nor to those persons prone to acetonuria. In the absence of any known single test to distinguish which patients will ultimately be satisfactorily controlled by Tolbutamide, a preliminary period of observation of one to two weeks should be made. After this, the patient's diabetic status and the need to start Tolbutamide are assessed as follows: *Patients on Diet but no Insulin*—The patient should be seen each evening at least during the first week of Tolbutamide therapy. Dosage is started at two to three g. a day. Two 0.5-g. tablets are taken with breakfast, two with the midday meal, and one to two at night. Later, the dosage is one to two tablets three times a day. The amount is reduced as the hyperglycemia lessens. Glycosuria usually disappears within the first week, after which the dose is fixed at the minimum that gives adequate control. If glycosuria is not lessened by the end of the fourth day, the drug may be increased to 1.5 g. three times a day for a period of three weeks. *Patients Controlled on Insulin*—Persons receiving up to 20 units of insulin a day may have the amount reduced by four units a day. Patients receiving 20-40 units of insulin daily are less likely to benefit from Tolbutamide therapy: they should be seen at least twice a week. Patients receiving more than 40 units of insulin daily should be hospitalized during the change of Tolbutamide. When mild glycosuria occurs, Tolbutamide may be started. *Patients Uncontrolled on Insulin*—Tolbutamide may be started after preliminary observation makes it possible to recognize its effect. In general, the therapeutic trial of Tolbutamide should last for three weeks unless there is evidence of the diabetes getting out of control. The report continues that Tolbutamide is less likely than insulin to produce a hypoglycemic attack because its full effect takes place about four hours after administration, by which time the next meal is due. With satisfactory control, the patient may be maintained indefinitely on three g. of Tolbutamide daily, but dietary restrictions should not be relaxed. Tolbutamide has seldom had to be discontinued because of side-effects. Skin rashes disappear when the drug is discontinued. Though Tolbutamide has effectively controlled hyperglycemia of diabetes mellitus, its effects on the progress of the underlying diabetic state and the development of diabetic complications are not as yet fully understood.

W. J. H. BUTTERFIELD

British Medical Journal, 2:325, 1957

Barbiturate Poisoning Treated with Megimide

The literature on the effects of Megimide has been reviewed, and a case of barbiturate poisoning reported by the author. Megimide is a colorless crystalline compound with a solubility in water of 0.5 per cent, an advantage since it minimizes the risk of overdosage, according to the report. The drug shows little evidence of barbiturate antagonism, but appears to possess nonspecific analeptic properties. Megimide is available as a 0.5 per cent solution in vials con-

—Continued on page 164a

GITALIGIN STANDARDS

For Controlled Cardiac Therapy

Unusually Wide Margin of Safety [1-5]—
The average therapeutic dose of Gitaligin is only ⅓ the toxic dose, thus providing a margin of safety approximately twice as great as any other glycoside currently available.

Medium Rate of Dissipation—
rate of excretion between rapidly excreted digoxin and slowly excreted leaf or digitoxin.

Complete Absorption—
rapid and complete from gastrointestinal tract.

Uniform Potency—
constant from batch to batch.

Give all your patients with cardiac decompensation the unique benefits of the "wide safety margin" cardiotonic—

℞

GITALIGIN®

(White's brand of amorphous gitalin)

FOR SAFE, SMOOTH, CONTROLLED CARDIAC THERAPY

White's

WHITE LABORATORIES, INC.
Kenilworth, N. J.

Supplied:

Gitaligin 0.5 mg. tablets—bottles of 30 and 100.
Gitaligin Injection Ampule—2.5 mg. in 5 cc. sterile, I.V. solution.
Gitaligin Drops with special calibrated dropper.

Simple dosage equivalents:

It is easy to switch patients who are being maintained on other digitalis preparations to Gitaligin by substituting the equivalent daily maintenance dose of Gitaligin listed below.

0.5 mg. (1 tablet) of Gitaligin is approximately equivalent to 0.1 Gm. (1½ gr.) digitalis leaf, 0.5 mg. digoxin or 0.1 mg. digitoxin.

1. Harris, R., and Del Giacco, R. R.: Am. Heart J. 52:300 (Aug.) 1956. 2. Weiss, A., and Steigmann, F.: Am. J. M. Sc. 227:180 (Feb.) 1954. 3. Dimitroff, S. P.; Griffith, G. C.; Thorner, M. C., and Walker, J.: Ann. Int. Med. 39:1189 (Dec.) 1953. 4. Hejtmancik, M. R., and Herrmann, G. R.: Texas J. M. 51:236 (May) 1955. 5. Bettermen, R. C.; DeGraff, A. C., and Rose, O. A.: Circulation 9:201 (Feb.) 1952.

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in topical and ophthalmic infections

USE 'POLYSPORIN'®

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POLYMYXIN B—BACITRACIN OINTMENT

to insure broad-spectrum therapy with minimum allergenicity

For topical use: in ½ oz. and 1 oz. tubes.

For ophthalmic use: in ⅛ oz. tubes.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

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Here it is STERILE *Rib-Back* BLADE

in the PUNCTURE PROOF Package



It's Sharp

Naturally, it can be AUTOCLAVED

Don't compromise package safety or blade quality. The B-P STERILE Rib-Back BLADE package provides both—on the outside an easily opened PUNCTURE PROOF envelope that can be autoclaved if desired . . . on the inside a STERILE Rib-Back BLADE of the same superior carbon steel you have always enjoyed.

CARBON steel—the BEST for FINE cutting edges

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BARD-PARKER RIB-BACK BLADES — ALWAYS YOUR BEST BUY IN PERFORMANCE
SUPPLIED IN THE PACKAGE TO MEET YOUR REQUIREMENTS

—Continued from page 160a

taining 100 cc., or in vials of 50 mg. per 100 cc. or normal saline. It is administered intravenously slowly, the amount depending on the weight of the patient, and it is repeated every five to fifteen minutes according to response. The aim is to bring the patient to a light plane of anesthesia where he can be easily aroused. The condition and reaction of the individual should be watched carefully. After the patient has reacted, it is seldom necessary to administer additional therapy unless coma has been prolonged before treatment, or a long-acting type of barbiturate has been the etiologic agent. A thirteen-month-old infant had ingested approximately ten grains of Amytal. In the emergency room he could not be aroused, and, in spite of routine measures, his condition continued to deteriorate. Megimide solution was then given through intravenous tubing, 3 to 5 cc. every five to fifteen minutes for one and one-half hours, when the child was in a plane of light anesthesia. He responded to a total of 150 mg. of Megimide. The child gradually became active and alert, and was discharged on the third hospital day.

BRIAN E. NOLAN

Journal of Pediatrics, 52:73, 1958

Terramycin as an Adjunctive Agent in the Treatment of Tuberculosis

The authors review the use of chemotherapeutic agents for the treatment of tuberculosis. The need for a combination of drugs is pointed out in order to delay or prevent the emergence of resistant bacilli. The drugs most frequently employed are the primary agents, streptomycin, and isoniazid, and an ancillary agent, para-aminosalicylic acid, used in combination with them. If

—Continued on page 165a







With even the most rapid antibacterial action, pain of urinary tract infection usually persists until healing begins. So Azo Gantrisin adds *symptomatic* relief to potent antibacterial action: its azo component offers swift suppression of both pain and discomfort during this interim phase.



ROCHE

simple as 1 2 3

especially for urinary tract infections

1 indications:

Urinary tract infections when associated with pain or discomfort. Particularly useful in cystitis, prostatitis and urethritis when due to susceptible organisms. Also valuable before and after urologic surgery, cystoscopy and catheterization.

2 description:

Azo Gantrisin provides – in a single tablet – the wide-spectrum, well-tolerated antibacterial action of Gantrisin, the highly soluble, single sulfonamide, together with the local analgesic action of phenylazo-diamino-pyridine HCl.

3 properties:

Not only does Gantrisin provide high urinary concentrations with little likelihood of renal blocking, but therapeutic blood and lymph levels can be readily achieved and maintained. This is significant in view of the fact that the majority of urinary tract infections are carried to the kidney by the blood stream. Phenylazo-diamino-pyridine HCl is a local analgesic agent useful in urinary tract disorders; it generally provides rapid relief of dysuria, burning and frequency. The orange-red dye appears promptly in the urine; this often has a favorable psychologic effect.

Supplied: Red tablets containing 0.5 Gm Gantrisin® (brand of sulfisoxazole) plus 50 mg phenylazo-diamino-pyridine HCl, in bottles of 100 and 500.

ROCHE

ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc • Nutley 10 • New Jersey

New!

Theradan

TRADEMARK

with Sarthionate

T M

Clears up the severest dandruff with just 3 applications



RELIEF LASTS FOR MONTHS

Twenty months of clinical investigation on dandruff demonstrate *complete clearing of scaling in all cases,* usually *with just three applications* of easy-to-use THERADAN. Dandruff cases resistant to resorcin, sulfur and selenium preparations clear promptly and safely with new THERADAN.

Relief of scaling is long-lasting—scalp stays clear for 1 to 4 months.

HOW THERADAN ACTS

THERADAN *is a therapeutic formula* not a shampoo or tonic. THERADAN contains Sarthionate, our trademark for a distinctive new combination of a special form of sulfur and a wetting agent.

This unique solution not only clears loose dandruff, but also removes dead tissue by penetrating the outermost layers of the scalp. In mild or moderate cases of seborrhea, THERADAN is left on the scalp for ½ to 1 hour before shampooing. In severe cases, THERADAN is left on up to eight hours or over night.

Theradan

active ingredients

Sarthionate

bis-(lauryltrimethylammonium)-polythionate . (by weight) . 3.0%

tetradecylamine o-lauroyl sarcosine . . . . . (by weight) . 0.5%

ethyl alcohol . . . . . (by volume) . 68.86%



For more information about the clinical background of THERADAN, write to Medical Director, Dept. M-68

Bristol-Myers Co. • 19 W. 50 St. • New York 20, N. Y.

UNEXCELLED ADVANTAGES... IN

DIA

BICARBONATE-REGULATING DIURETIC

HOW DIURETICS ACT

Primarily by regulation of bicarbonate transport	DIAMOX acetazolamide
Primarily by regulation of chloride transport	mercurials chlorothiazide

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

*Reg. U. S. Pat. Off.

Lederle

BOTH BASIC DIURETIC REGIMENS

MOX*

ACETAZOLAMIDE LEDERLE

1

Advantages of DIAMOX in single-drug diuresis

DIAMOX—operating through the well-understood mechanism of *bicarbonate* transport regulation—provides ample, prolonged diuresis in the great majority of patients.

DIAMOX is virtually nontoxic . . . has not caused renal or gastric irritation . . . has no pronounced effect on blood pressure. It is rapidly excreted, does not accumulate in the body, permits convenient dosage adjustment, allows unbroken sleep. Small, tasteless, easy-to-take tablets . . . usual dosage, only one a day.

CARDIAC EDEMA

PREMENSTRUAL TENSION

EDEMA OF PREGNANCY

OBESITY

2

Advantages of DIAMOX in intensive, two-drug diuresis

When intensive diuresis must be maintained, DIAMOX, alternated with an agent for regulation of *chloride* transport, has proved a regimen of choice. Through dual *bicarbonate-chloride* regulation, it produces maximal sodium-water excretion with minimal distortion of serum electrolyte patterns, greater patient comfort, lessened risk of induced drug resistance.

ADVANCED CONGESTIVE HEART FAILURE

REFRACTORY TOXEMIA OF PREGNANCY

—Continued from page 164a

the streptomycin and isoniazid are used together, the possibility arises of the emergence of resistant strains to both at the same time. For special cases, and for patients who are intolerant of para-aminosalicylic acid, another minor agent is necessary, and those that have been used are viomycin, oxytetracycline (Terramycin) and cycloserine. The review states that this combination of terramycin (1 Gm. daily in divided doses) and either streptomycin or isoniazid offers an entirely satisfactory solution to the problem of preserving sensitivity to the major agent. Sixteen patients with advanced pulmonary tuberculosis who could no longer tolerate streptomycin were given a combination of isoniazid and Terramycin. The patients did as well or even better than they had with other multiple chemotherapy. Terramycin has been found to have considerable value against non-tuberculous infections in patients with tuberculosis. The report further states that the drug holds a unique position among antibiotics because its broad-spectrum activity against a wide variety of pathogens is unsurpassed among the commonly used antibiotics, and, at the same time, its activity against the tubercle bacillus is shown by none of the other antibiotics.

HENRY BACHMAN and JULIUS FREUND
Diseases of the Chest, 32:520, 1957

Camoform in the Treatment of Amebiasis

Thirty-nine patients suffering from chronic amebic dysentery were given a dosage of Camoform varying between 250 and 500 mg. three times daily for five days. It was found that administration of the tablets with meals prevented gastric intolerance. In all cases there was symptomatic cure and the patient remained well over the subsequent months of observation. All cases became free of Entamoeba histolytica after one course of treatment, and no relapses occurred during several months of observation. Side-effects were minimal and in no case were sufficient to discontinue treatment. A 60-year-old man sought medical aid because of the sudden onset of cough, fever and nausea. Two days later, brown expectoration and chest pain developed. A roentgenogram showed an abscess, and E. histolytica was isolated from his sputum. After a diagnosis of amebic pulmonary abscess, 750 mg. of Camoform were given daily for six days together with four injections of 400,000 units of penicillin. The report further states that the patient made an excellent recovery, and a thorough examination after two and one-half months showed him to be in good condition.

J. M. BUSTAMENTE AND RIVERO,
Translated by E. H. PAYNE
Journal of the A. M. A., 169:829, 1957

Chlorpromazine in the Treatment of Bronchial Asthma and Chronic Pulmonary Emphysema

Recent reports in the literature relating to the use of chlorpromazine (Thorazine) for the treatment of bronchial asthma and chronic pulmonary emphysema caused the author and his coworkers to conduct their own investigation. Thirty-five patients with bronchial asthma, chronic pulmonary emphysema, or both were given chlorpromazine, 25 to 50 mg. either orally or intramuscu-

—Continued on page 172a

Always in the physician's bag

. . . ready for action

SPARINE should always be on hand for the patient in psychic crisis. In the medical emergency, it relieves acute apprehension and modifies the patient's response to pain. In overactivity or aggressiveness, SPARINE rapidly calms the patient and encourages cooperative behavior. To simplify the management of these difficult patients, always carry SPARINE.

SPARINE provides prompt control by intravenous injection, effective maintenance by both the intramuscular and oral routes, and is well-tolerated in all three methods of administration. SPARINE does not cause liver damage, parkinsonian-like syndrome; only rarely have blood dyscrasias or seizures been reported.



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Promazine Hydrochloride

INJECTION

TABLETS

SYRUP

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EQUANIL® Meprobamate

PHENERGAN® HCl Promethazine HCl

SPARINE HCl Promazine HCl

A Wyeth normotropic drug for nearly every patient under stress

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Philadelphia 1, Pa.

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topical antibiotic therapy in its most convenient form

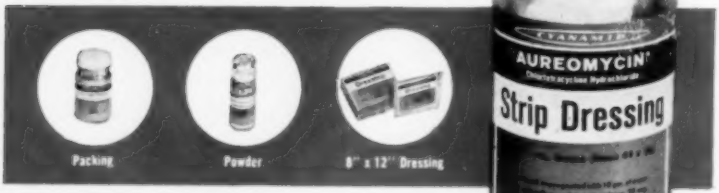
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STERILE AUREOMYCIN DRESSINGS in 4 handy forms provide instant-ready added protection against wound infection in hospital, office or emergency use.

STERILE AUREOMYCIN DRESSINGS ensure safe, high-concentration broad-spectrum action at the site of potential or existing infection... promote faster healing and virtually eliminate odor in burns, abscesses, surgical incisions, amputations, and other wounds.





Strip Dressing

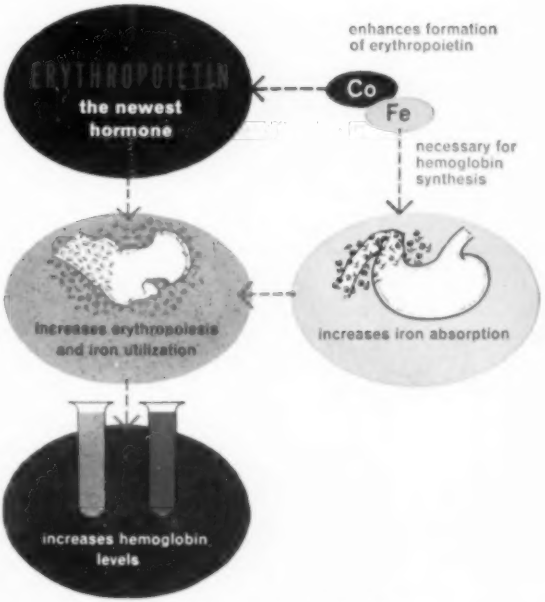
AUREOMYCIN Chlortetracycline Impregnated Gauze Products—containing 2% Chlortetracycline Hydrochloride in a special, nonadherent, water-absorbent base—are available as: Strip Dressing, ½" x 72", 2" x 108"; in glass jars. 8" x 12" Dressing, in individual aluminum foil envelopes. Packing, ½" x 24", 1" x 36", and 2" x 36"; in glass jars.

AUREOSURGIC® Surgical Powder—containing 50 mg. Chlortetracycline Hydrochloride per gram in a soluble base—is available in shaker-top bottles of 20 Gm.

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NEW RESEARCH ON ERYTHROPOIETIN EXPLAINS CLINICAL SUPERIORITY OF



RONCOVITE®-mf

(MODIFIED FORMULA)

IN THE COMMON ANEMIAS

Elucidation of the action of erythropoietin—the erythropoietic hormone—provides a clear explanation for the observations of Holly,[1] Ausman,[2] Tevetoglu[3] and many others who have reported that in the common anemias cobalt-iron therapy results in a clinical response superior to that produced by iron alone.

Increased Iron Absorption and Utilization—Recent investigations show that cobalt enhances the formation of erythropoietin.[4,5] This hormone increases the rate of production of new red cells which, in turn, increases the rate of both iron utilization by the marrow and iron absorption from the intestine.[6]

Clinical Application—In simple *iron deficiency anemia*, 89% of patients treated with Roncovite exceeded 12 Gm. of hemoglobin per 100 cc., while only 33% of the same patients treated with iron alone for a comparable period reached this level.[2] In *anemia of pregnancy*, 98.2% of Roncovite-treated patients maintained their hematologic status; 63.8% delivered with a hemoglobin of 13 Gm. per 100 cc. or more.[1] In *anemia of infancy and childhood* an average hemoglobin level of only 8.7 Gm. per 100 cc. was attained with iron alone while the same patients subsequently reached an average hemoglobin level of 11.6 Gm. per 100 cc. with Roncovite.[3]

Roncovite-MF is the new therapeutic agent based on erythropoietin formation which translates this new research into the practical utility of full iron effectiveness with greatly decreased, better tolerated iron dosage.

Each enteric-coated, green tablet contains:

Cobalt chloride, 15 mg.
Ferrous sulfate exsiccated, 100 mg.

Maximum adult dosage:
one tablet after each meal and at bedtime.
Supplied: Bottles of 100 tablets.

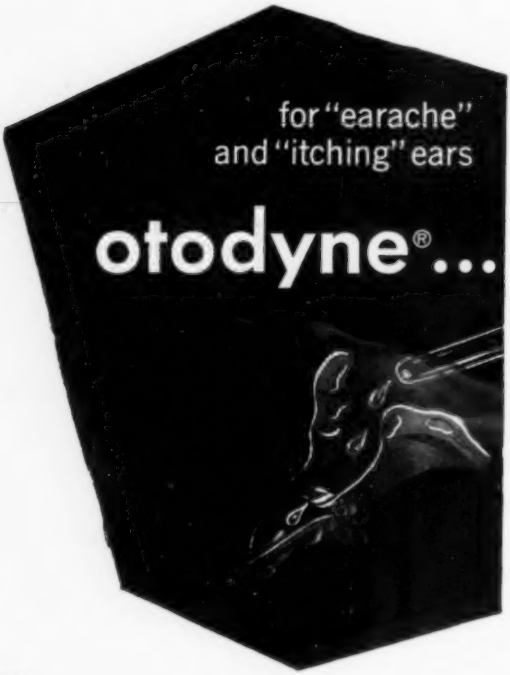
Bibliography available on request.

LLOYD BROTHERS, INC.
CINCINNATI 3, OHIO

MODERN THERAPEUTICS———

—Continued from page 168a

larly. In some instances the Thorazine was given in combination with therapy designed to improve pulmonary ventilation and arterial blood gas content. In several of the patients with uncomplicated bronchial asthma, single infollowed by marked diminution of tramuscular doses of Thorazine were wheezing and restlessness within 15 to 30 minutes. In some of the patients with bronchial asthma and chronic pulmonary emphysema there was distinct lessening of dyspnea and wheezing, especially when the drug was combined with conventional bronchodilator therapy. Of 19 patients with primary chronic diffuse obstructive pulmonary emphysema, ten patients exhibited a favorable hospital course with relaxation and control of restlessness and irritability on combined therapy. Clinical improvement was not attained in nine patients, but this was accounted for by the severity of the disease rather than by any untoward effect of the drug. Any agent which induces relaxation quickly with little respiratory depression should facilitate the administration of intensive therapy. From the evaluation of the emphysematous subjects on chlorpromazine combined with intensive therapy, the investigators concluded that chlorpromazine appears to satisfy this requirement. Also, the drug may be safely and effectively administered, either singly or in



Otodyne brings gratifying symptomatic relief in simple "earache" and in pruritic conditions of the external ear canal.

Quick-acting Zolamine (1%) and long-acting Eucupin® (0.1%) are combined in a polyethylene base which does not obscure anatomic landmarks.

In 15 cc. dropper bottles.

White Laboratories, Inc.
Kenilworth, N. J.

combination with known bronchodilator agents, in the therapy of paroxysms of bronchial asthma.

GEORGE L. BAUM

Diseases of the Chest, 32:574, 1957

Oral Administration of Tolbutamide

Effective control of diabetes mellitus with an oral substitute for insulin has been the goal of many investigators.

The author observed the effect of tolbutamide (Orinase) in persons with normal carbohydrate metabolism and patients with diabetes mellitus. Patients requiring large doses of insulin for control were given a trial on tolbutamide in combination with reduced doses of insulin. Eight nondiabetic patients were hospitalized for two days of study prior to the administration of tolbutamide. After ingestion of the drug, a maximum reduction in blood sugar was obtained within one to two hours. Thirty-seven diabetic patients, including 27 who were taking insulin, were hospitalized from two to four weeks, and an attempt was made to control the diabetes with tolbutamide alone or in combination with insulin. Appropriate tests were carried out. Doses of tolbutamide varied. At first, each patient was given 3 gm. daily in divided doses. Adjustments were made periodically, thereafter in accordance with individual needs as indicated by repeated determination of the content of sugar in the blood and

—Concluded on page 178a

effective anti-bacterial and anti-fungal therapy in

otobiotic®

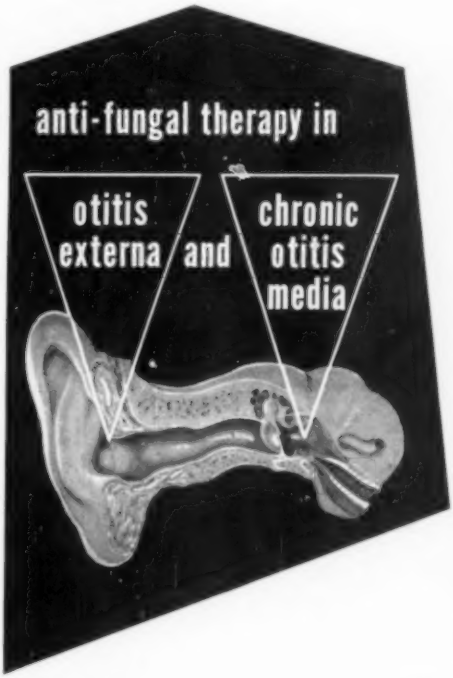
(ANTIBACTERIAL-ANTIFUNGAL) EAR DROPS

- Eradicates etiologic bacteria and fungi
- Nonirritating
- Virtually nonsensitizing
- Matches the physiologic pH of the external ear canal
- Does not mask anatomic landmarks during otoscopy

Each cc. contains 3.5 mg. Neomycin (from the sulfate) and 50 mg. sodium propionate in a hydroalcoholic-glycerin vehicle.

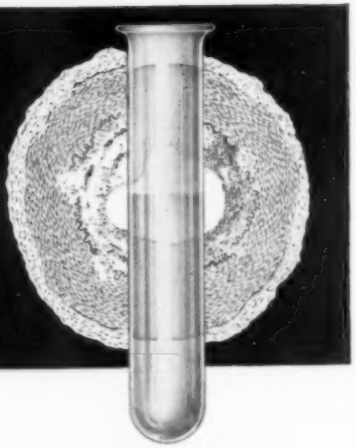
In 15-cc. dropper bottles.

White Laboratories, Inc.
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IN DIABETES

Blood Cholesterol Regulation Is Desirable



Frequently, diabetes mellitus is associated with excessive coronary atherosclerosis and heart disease. It is also well recognized that vascular disease manifests itself at an earlier age and progresses more rapidly in the diabetic . . . especially the diabetic female. The early onset and severe degree of atherosclerosis may be due to faulty lipid metabolism, with a concomitant elevation in blood cholesterol levels. Kinsell[1] reports that even in diabetics with extensive vascular disease it is possible to produce normal cholesterol levels with an essential fatty acid emulsion.

The consensus of opinion today is that elevated cholesterol levels should be reduced or prevented. This can be done very well by the addition of adequate amounts of linoleic acid and vitamin B_6 to the diet. In scores of diabetic patients, with extensive vascular disease, diets high in linoleic acid resulted in improvement.[2,3] Vitamin B_6 apparently is necessary to convert linoleic acid into the primary essential fatty acid, arachidonic acid. Thus the body is dependent on an intake of both linoleic acid and vitamin B_6 for normal cholesterol levels.[4,5]

This is why ARCOFAC (Armour Cholesterol Lowering Factor) provides *both* linoleic acid and vitamin B_6 in adequate amounts, thus allowing the patient to eat a balanced, nutritious and palatable diet. Prophylactic dosage is 1-2 tablespoonfuls daily; therapeutic—2-8 tablespoonfuls daily.

Each tablespoonful (15 ml.) of Arcofac emulsion contains:

Essential fatty acids† ..... 6.8 Gm.
(measured as linoleic) with 2.5 I.U. of Vitamin E*

Pyridoxine hydrochloride
(Vitamin B_6) ..... 1.0 mg.

† Supplied by safflower oil which contains the highest concentration of polyunsaturated fatty acids of any commercially available vegetable oil.

* Added as Mixed Tocopherols Concentrate, N.F.

References 1-5 supplied on request.

Arcofac®

Armour Cholesterol Lowering Factor

THE ARMOUR LABORATORIES

A DIVISION OF ARMOUR AND COMPANY • KANKAKEE, ILLINOIS

for inflammatory anorectal disorders . . .

Wyanoids® HC

Rectal Suppositories with Hydrocortisone, Wyeth

the first suppository to contain

Hydrocortisone—to reduce inflammation and edema

Plus the time-tested WYANOIDS formula—to relieve itching, burning, soreness, pain

- Proctitis accompanying ulcerative colitis
- Acute and chronic nonspecific proctitis
- Postoperative scar tissue with inflammatory reaction
- Acute internal hemorrhoids
- Radiation proctitis
- Medication proctitis
- Cryptitis



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Ulcerative Colitis

Supplied: Each suppository contains 10 mg. hydrocortisone acetate, 15 mg. extract belladonna (0.19 mg. equiv. total alkaloids), 3 mg. ephedrine sulfate, zinc oxide, boric acid, bismuth oxyiodide, bismuth subcarbonate and balsam peru in an oleaginous base.

Literature available on request

to pull your diarrhea patients back in shape rapidly

INTROMYCIN
AROBON

two palatable antidiarrheals

FOR IMMEDIATE RELIEF OF SYMPTOMS AND A QUICKER RETURN TO NORMAL

formed stools are produced 5 times faster[1]
lost electrolytes are replenished
water loss is better controlled

AROBON®—*carob powder...demulcent and adsorbent...contains no chemotherapeutics, no sedatives, no narcotics*

Arobon available in 5 oz. bottles.

INTROMYCIN™—*carob powder plus Neomycin and Streptomycin... for infectious diarrheas*

Intromycin available in 2½ oz. bottles.

1. Abella, P. U.: J. Pediat. *41*:182, 1952.



PITMAN-MOORE COMPANY
DIVISION OF ALLIED LABORATORIES, INC., INDIANAPOLIS 6, INDIANA



1/2 as many tablets needed

- to produce diuresis in cardiac edema . . . used alone or to potentiate mercurial diuretics
- to relieve premenstrual tension
- to eliminate stilbestrol nausea

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The Smallest, Most Preferred *One Gram* Enteric Coated Ammonium Chloride Tablet, *originated by Brewer* . . . easy-to-swallow . . . provides freedom from gastric irritation . . . 15 gr., instead of 7½ gr., reducing the number of tablets to be taken daily by ½ . . .



recognized by its unique mottled green enteric coating . . . supplied in bottles of 100 and 500

Samples and Literature will be mailed to you immediately on your request

Brewer

EST. 1852

WORCESTER 8, MASSACHUSETTS, U.S.A.

—Concluded from page 173a

urine. Doses as high as 6 gm. a day were used, but in general when results could not be obtained with 4 gm. daily, larger amounts were of no avail. The control of diabetes was considered adequate in 43.5 per cent. In a series of more than 500 ambulatory adult diabetic patients, 80 per cent achieved adequate control with tolbutamide alone. Many persons with mild diabetes refuse to take insulin. More exact control may be possible with tolbutamide and, in the absence of toxicity, this advantage should probably be utilized until relationships between inadequate control and severity of complications are more precisely defined. In the series, no patient responded better to a combination of tolbutamide and reduced doses of insulin than to Orinase alone. In a search for common denominators in the group in which control was obtained with tolbutamide, it was noted that: (1) the patients were more than 40 years of age, (2) the disease was of the milder, more staple type, and (3) insulin requirements were minimal to moderate. There was no specific correlation between duration of diabetes and probability of favorable response to tolbutamide. The character of the diabetes was important. All who responded well had adult, staple diabetes. Frequent follow-up studies on the original group and on other successfully treated patients for a period of 14 months indicated that there is a tendency for the blood sugar level to decline gradually. Consequently the dosage of talbutamide could be lowered to 0.5 gm. daily.

THOMAS H. LAMBERT ETAL.
California Medicine, 88:103, 1958

Intestinal Amebiasis Treated with Polybenzarsol

Since many drugs used in the management of intestinal amebiasis have given indifferent success, the authors report their experience with the use of polybenzarsol (Benzorol) which was found to have in vitro action against *Endamoeba histolytica*, and to be nontoxic. Fifty-three patients known to harbor *E. histolytica* were treated on an ambulatory basis. Patients older than 14 years were given 500 mg. of the drug three times a day for ten days. Patients 14 years of age and younger were given a dosage commensurate with their body weight. No other drugs with antiamebic properties were used simultaneously.

Stool examinations were made ten days, one month, and three months after completion of treatment. Proctosigmoidoscopic examinations were performed on all patients before and after treatment. Prompt symptomatic relief occurred in patients with acute symptoms such as dysentery, cramps, or tenesmus. Relief from frequent stools and abdominal cramps usually manifested itself within 24 to 48 hours. Symptoms had disappeared by the end of one week's therapy, in all cases, according to the authors. Forty-seven of the 53 patients had no evidence of *E. histolytica* after one course of polybenzarsol.

Four of the six patients in whom treatment failed were given a second course of treatment, and three individuals became negative. The over-all cure rate was, therefore, 94.3 per cent. No undesirable side-effects occurred.

R. F. ALLEN and G. WELLS
Antibiotic Medicine & Clinical Therapy, 4:781, 1957

in perfect harmony



with baby's skin needs

new, different

antibacterial
cleanses
conditions

DESITIN® BABY LOTION



In tune with modern dermatological concepts, only Desitin BABY Lotion combines all these ingredients for over-all care of the baby's skin:

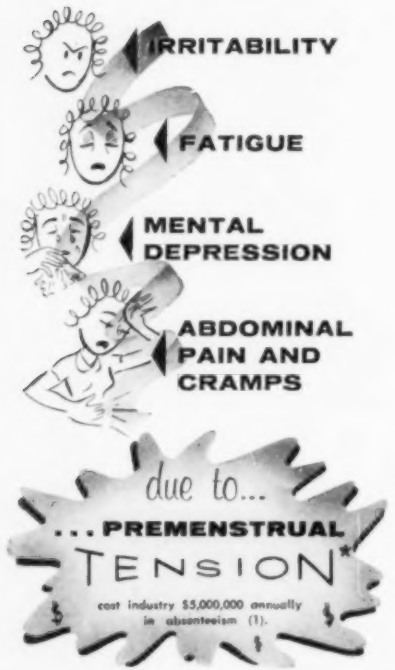
- **Lano-Des*** — Desitin's special soothing, lubricating, liquid lanolin.
- **Hexachlorophene**—effectively protects against ammonia-producing and other common skin bacteria.
- **Vitamins A and E** — important to skin health and smoothness.
- **Special Emulsifiers** — to cleanse baby's skin gently and thoroughly — yet **free from mineral oil.**

Desitin BABY Lotion is unusually bland, non-toxic, safe. Non-greasy, stainless; free-flowing, pleasantly scented.

We would be pleased to send you **samples** and literature.

*trade mark

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*These conditions respond to HVC (Hayden's Viburnum Compound), prescribed by physicians for over ninety years as a sedative and smooth muscle relaxant. Symptomatic relief is both prompt and prolonged.



HVC
HAYDEN'S VIBURNUM COMPOUND

Contains viburnum opulus, dioscorea, prickly ash barries, aromatics and sufficient alcohol to release the resins in the crude drugs.

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City _____ Zone ___ State _____

(1) Ferguson, J. H., Archivos Medicos de Cuba, 7:189 (July-Nov.) 1956

NEWS AND NOTES

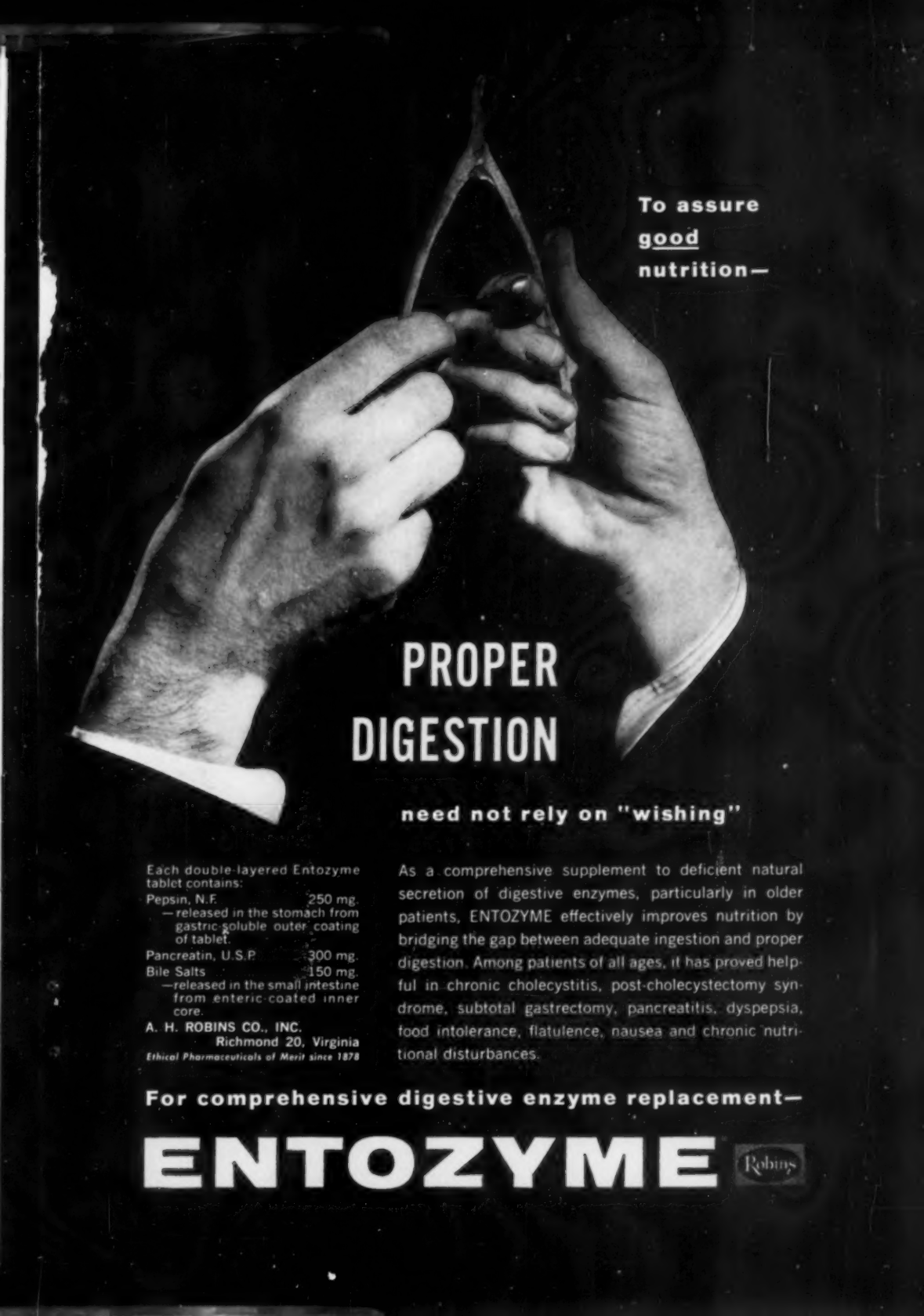
Inoperable Cancer Treatment

From Tulane University School of Medicine comes a report on the use of the heart-lung machine in the management of inoperable cancer in an organ or limb in which the disease is too widely spread to permit surgical removal. A completely separate circulatory system for the affected part is obtained by a tourniquet. Oxygenated blood containing a drug is fed into the main arteries after which it circulates through to the main veins to be siphoned off into the machine for reoxygenation. The technic as used at Tulane maintains the separate circulatory system for one-half hour during which time four doses of the drug are injected into the blood.

Appointment of Dr. Pappenheimer to Harvard

Professor A. M. Pappenheimer, Jr., known for his investigations on bacterial toxins and in the field of immunology, will become Professor of Biology at Harvard University sometime in 1958. Dean Bundy announced that Professor Pappenheimer of the Microbiology Department of the College of Medicine, New York University, will direct the

—Continued on page 184a


To assure
good
nutrition—
PROPER
DIGESTION
need not rely on "wishing"
Each double-layered Entozyme tablet contains:
Pepsin, N.F. 250 mg.
—released in the stomach from gastric-soluble outer coating of tablet.
Pancreatin, U.S.P. 300 mg.
Bile Salts 150 mg.
—released in the small intestine from enteric-coated inner core.
A. H. ROBINS CO., INC.
Richmond 20, Virginia
Ethical Pharmaceuticals of Merit since 1878
As a comprehensive supplement to deficient natural secretion of digestive enzymes, particularly in older patients, ENTOZYME effectively improves nutrition by bridging the gap between adequate ingestion and proper digestion. Among patients of all ages, it has proved helpful in chronic cholecystitis, post-cholecystectomy syndrome, subtotal gastrectomy, pancreatitis, dyspepsia, food intolerance, flatulence, nausea and chronic nutritional disturbances.
For comprehensive digestive enzyme replacement—
ENTOZYME
Robins

NEW
TOPICAL
DIMENSIONS
in

Antiinflammatory
Antipruritic
Antiallergic
Bactericidal
Fungicidal
Protozoacidal
} action

INCORPORATED IN EXCLUSIVE ACID MANTLE® VEHICLE

pH 5.0

Creme
COR-TAR-QUIN™

ACID MANTLE® · hydrocortisone · stainless tar · diiodohydroxyquinoline

In subacute and chronic dermatoses, "especially where an inflammatory reaction was accompanied by increased scaling and lichenification with secondary infection such as is seen in seborrheic dermatitis, atopic dermatitis, contact dermatitis, and neurodermatitis."

—Rein, C. R., and Fleischmajer, R.: Personal Communication.



Sig: Apply b. i. d.
½ oz., 1 oz., 2 oz., & 4 oz. tubes either 0.5% or 1.0% hydrocortisone.

DOME *Chemicals Inc.*
109 WEST 64 ST., NEW YORK 23, N.Y.
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FAST-ACTING ORAL BROAD-SPECTRUM THERAPY. The modern blue and yellow ACHROMYCIN V Capsules, combining equal parts of pure crystalline ACHROMYCIN Tetracycline HCl and Citric Acid, provide unsurpassed oral broad-spectrum therapy.

Speed of absorption adds new emphasis to the benefits of true broad-spectrum action, minimum side effects and wide range effectiveness that have established ACHROMYCIN as an antibiotic of choice for decisive control of infection.

REMEMBER THE V WHEN SPECIFYING ACHROMYCIN V. New blue and yellow capsules (sodium-free)—250 mg. with 250 mg. citric acid, and 100 mg., with 100 mg. citric acid.

ACHROMYCIN V dosage: Recommended basic oral dosage is 6-7 mg. per lb. body weight per day. In acute severe infections often encountered in infants and children, the dose should be 12 mg. per lb. body weight per day. Dosage in the average adult should be 1 Gm. divided into four 250 mg. doses.

ACHROMYCIN* V CAPSULES

Tetracycline HCl and Citric Acid Lederle

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY
Pearl River, New York

Lederle

*Reg. U. S. Pat. Off.

NEWS AND NOTES

—Continued from page 180a

program of tutoring in the biochemical sciences at the University.

While Senior Chemist at the Massachusetts State Antitoxin and Vaccine Laboratory before World War II, Dr. Pappenheimer isolated the diphtheria toxin in purified form. He has since worked on the mechanism of toxin production by the diphtheria bacileus and the mechanism by which toxin exerts its lethal action. He found that minute traces of iron play a critical role in the formation of toxin, and this lead to the suggestion that the toxin's poisonous properties result from its effect on the oxidative metabolism of the host cells. With Professor Carroll Williams of Harvard, he found that diphtheria toxin has a marked effect on the metamorphosis of the Cecropia silkworm by interfering with its respiratory metabolism.

The Doctor's recent research has centered on delayed hypersensitivity, especially the allergy resulting from chronic bacterial infections. He and his associates at New York University have deveolped methods for inducing this type of allergy to known proteins in animals and man at will. This has provided a potent tool for experimental studies on the relationship of hypersensitivity to immunity and disease mechanisms.

Dr. Garb Receives Unrestricted Fellowship

Dr. Solomon Garb, an Associate Pro-

—Continued on page 186a

IN IMPOTENCE

GLUKOR®

In a recent study[1] coitus was made possible in 85% of 67 cases of impotency with the use of 1 cc. of GLUKOR intramuscularly twice weekly, and maintained once weekly or as little as once monthly. GLUKOR was effective in 88.5% of patients[2] with impotence, male climacteric, senility, depression, angina and coronary.

GLUKOR, *a fortified chorionic gonadotropin, may be used regardless of age and/or pathology without side effects.* GLUKOR *has been found to alleviate symptoms*[2] *of* NERVOUSNESS, FATIGUE, IRRITABILITY, INSOMNIA, DYSPNEA, PALPITATION, *and* LACK *of* ENDURANCE.

Each cc contains:—200 I.U. chorionic gonadotropin (human), 25 mg. thiamine HCL, 52.5 ppm. L (+) glumatic acid, 0.5% chlorobutonal and 1% procaine HCL. Available in 10 & 25 cc multiple dose vials. Reg. U. S. Pat. Off., Pat. Pend. 1957. Copyright.

1. Gould, W. L.: Impotence, M. Times 84:302 Mar. '56.
2. Personal Communications from 110 Physicians.

Research Supplies

Literature Available

Pine Station, Albany, New York

Also — for the female — GLUTEST . . . effective in refractory cases where other therapy fails.



Many such hypertensives have been on *Rauwiloid* for 3 years and more*

for Rauwiloid IS better tolerated ..."alseroxylon [Rauwiloid] is an antihypertensive agent of equal therapeutic efficacy to reserpine in the treatment of hypertension but with significantly less toxicity."

*Ford, R.V., and Moyer, J. H.: Rauwolfia Toxicity in the Treatment of Hypertension, Postgrad. Med. 23:41 (Jan.) 1958.

For gratifying Rauwolfia response

Rauwiloid®

ALSEROXYLON, 1 MG.

virtually free from side actions

just two tablets at bedtime

After full effect one tablet suffices

Enhances safety when more potent drugs are needed.

Rauwiloid® + Veriloid®
alseroxylon 1 mg. and alkavervir 3 mg.
for moderate to severe hypertension. Initial dose, 1 tablet t.i.d., p.c.

Rauwiloid® + Hexamethonium
alseroxylon 1 mg. and hexamethonium chloride dihydrate 250 mg.
in severe, otherwise intractable hypertension. Initial dose, ¼ tablet, q.i.d.

Both combinations in convenient single-tablet form.

Riker
LOS ANGELES

NEWS AND NOTES

—Continued from page 184a

fessor in the Albany Medical College, Department of Pharmacology, was one of 44 medical men from around the nation to receive an unrestricted senior research fellowship from the U.S. Public Health Service. These fellowships, unlike those which go to young physicians just completing their training, are given only to doctors with an extensive background in medical research.

According to Dr. Garb, who came to Albany Medical College after spending ten years in full-time pharmacology research and teaching at Cornell University, the grant will permit him to "choose any research program which seems likely to be fruitful." Most of his past research has been with the effects of drugs on the heart. The Doctor expects to continue this program and, in addition, expects to perform some studies on cancer based on a somewhat different approach than that commonly employed.

University of Illinois

The University of Illinois has received $36,708 in gifts and grants to support health sciences research at the Chicago Professional Colleges. The donors were the National Cancer Institute, the Squibb Institute for Medical Research, the National Institutes of Health, the Abbott Laboratories, the Baxter Laboratories, G. D. Searle & Co., the American Limb & Orthopedic Co., and several private individuals.

The University Research Board awarded amounts up to $2,500 to each

—Continued on page 186a

A NEW
BIOCHEMICAL
CEREBRAL TONIC

l-GLUTAVITE



in confusion, mental fatigue, and anxiety

L-Glutavite, directed at improvement of oxidation and cellular nutrition in the brain, supplies optimal amounts of monosodium l-glutamate. This is the most readily utilized form of glutamic acid, the only amino acid with specific beneficial effects on cerebral metabolic processes. A therapeutic amount of niacin, for its vasodilating effect on cerebral blood vessels, is also provided in combination with an optimal supply of riboflavin, thiamine, pyridoxine and ascorbic acid to enhance cellular nutrition.

L-Glutavite offers a more fundamental, broader and safer range of action than pharmacologic stimulants, sedatives or tranquilizing agents. Clinical studies show that symptoms of fatigue, apathy, and depression are often ameliorated within 4 to 6 weeks after starting therapy.[1,2,3,4]

Initial Dosage: One packet (supplied in 30's) or two level teaspoonfuls (supplied in 6 oz. canisters) in tomato or vegetable juice four times a day. Maintenance dosage: reduce to twice a day.

References: 1. Fincle, L. P., and Reyna, L. J.: J. Clin. & Exper. Psychopath. 19:7 (Jan.-Mar.) 1958. 2. Bernheim, P.; Wingate, J. H.; Phillips, R. D., and Greenblatt, M.: Postgrad. Med. 19:485 (May) 1956. 3. Katz, I. M., and Kunellakis, Z.: Incentiv. Rec. Med. 166:506 (Sept.) 1956. 4. Che, J.: J. Indiana M. A. 50:992 (Aug.) 1957.

Crookes-Barnes Laboratories, Inc., Wayne, N. J.



3-way relief of menopausal symptoms

- Dienestrol and Methyltestosterone—estrogen-androgen combined for more effective control of symptoms of hypo-estrogenemia
- Pentobarbital Sodium for relief of hyperirritability, anxiety and tension
- Dextro-Amphetamine Sulfate to elevate the mood and restore a normal, cheerful outlook

AMPERONE T.M.

FOR A CALM CLIMACTERIUM

Each AMPERONE tablet contains:

Dienestrol	0.5 mg.
Methyltestosterone	2.5 mg.
Pentobarbital Sodium	30.0 mg.
Dextro-Amphetamine Sulfate	5.0 mg.

Dosage: 1 tablet daily

Supplied: Bottles of 60 tablets

Prescribe with Confidence

KREMERS-URBAN COMPANY

Milwaukee 1, Wisconsin

Ethical Pharmaceuticals since 1894

—Continued from page 186a

of twelve departments to be used principally for materials and equipment as well as for student assistance. The awards approved by the Board totaled $17,436.

Temple University School of Medicine

U.S. Public Health Service grants totaling $131,914 have been awarded to members of the faculty of the Temple University School of Medicine. In the near future, additional facilities for the treatment of deep-seated cancers will be available with the dedication of a new two-million electron-volt Van de Graaf X-ray generator, a gift of the Donner Foundation of Philadelphia.

Heart Sounds Studied

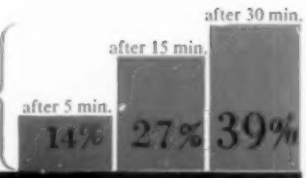
Until recently, only three persons had been able to obtain more or less accurate tracings of sounds from inside of the heart by introducing extremely tiny microphones within the heart chambers. This, however, could be done only during right heart catheterization, while most of the acquired lesions of the valves of the heart, as in rheumatic fever, develop in the left side which does not permit the introduction of even a tiny microphone.

Dr. A. A. Luisada, Director of Cardiology at the Chicago Medical School, and his co-workers have now developed a new specially designed electronic device which makes the entire procedure extremely simple. The sound vibrations which arise within the heart are trans-

—Continued on page 192a



Progressive increases in vital capacity following a single oral dose of five tablespoonfuls of Elixophyllin. (Average increase in 30 minutes – 807 cc.)*



AIR HUNGER in ASTHMA



Average vital capacity of 20 patients in acute asthmatic attack was 2088 cc. before treatment.*

*Spielman, D.: Ann. Allergy 15:270, 1957.

RELIEVED IN MINUTES BY ORAL DOSAGE...

74% of severe attacks terminated by oral medication

Fifty unselected patients admitted for emergency room treatment of severe acute asthmatic attacks were given 75 cc. Elixophyllin *orally* instead of intravenous aminophylline. Of these, 37 (74%) were completely relieved and discharged without further treatment – 9 responded to additional therapy – 4 were hospitalized as status asthmaticus cases.

– Schluger, J., et al.: Am. J. M. Sci. 234:28, 1957.

Each tbsp. (15 cc.) contains: THEOPHYLLINE 80 mg., ALCOHOL 3 cc.
Bottles of 16 fl. oz. available at prescription pharmacies – Rx only.

ELIXOPHYLLIN

Gastric intolerance rarely encountered.

Literature upon request

Sherman Laboratories
Detroit 11, Michigan

Documentary Case History . . .

Hypertension controlled for four years with Serpasil®

(reserpine CIBA)



K. C., a 67-year-old retired shirt manufacturer, had a 16-year history of hypertension, was troubled by recurrent dizzy spells and headaches. "I'd get several attacks a day. . . . Usually I'd go into the bedroom and lie down." Serpasil therapy was started four years ago, effecting a gradual reduction of the patient's initial blood pressure of 220/120 mm. to the present 140/80. Now well and asymptomatic, ". . . I'm able to go to matinees and see some of the TV shows."

SUPPLIED: TABLETS, 4 mg. (scored), 2 mg. (scored), 1 mg. (scored), 0.25 mg. (scored) and 0.1 mg.

ELIXIRS, 1 mg. and 0.2 mg. Serpasil per 4-ml. teaspoon.

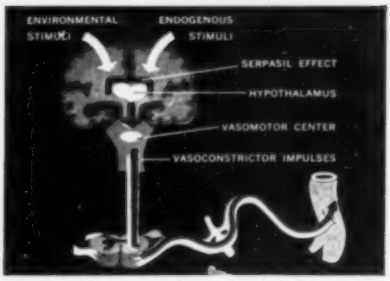
PARENTERAL SOLUTION: *Ampuls*, 2 ml., 2.5 mg. Serpasil per ml. *Multiple-dose Vials*, 10 ml., 2.5 mg. Serpasil per ml.



Hypertension controlled through

SYMPATHETIC REGULATION

Serpasil shields the psychic and somatic reaction centers from emotional and environmental stress stimuli, thereby inhibiting the discharge of vasoconstrictive impulses through the sympathetic nerves.



Adapted from Moyer, J. H., Dennis, E., and Ford, R.: Arch. Int. Med. 96:530 (Oct.) 1955.

CIBA SUMMIT, N. J. 8/8936HR

and now **HIGH POTENCY CORTICOID CONTROL**





whenever oral therapy is impractical



in high dosage therapy
in patients undergoing surgery
in the severely ill or debilitated
in presence of vomiting, coma
in the presence of shock





New

STERANE® I.M.

brand of prednisolone

the first high potency corticoid designed specifically for intramuscular use

provides rapid therapeutic concentration • precise dosage control • no local irritation reported • most convenient form whenever oral corticoids are impractical, unacceptable • for hospital or office use

Supplied: In vials of 5cc., each cc. containing 25 mg. prednisolone acetate (STERANE) in aqueous suspension.
Also available: STERANE Tablets—5 mg. white tablets, bottles of 20 and 100; 1 mg. pink tablets, bottles of 100.

Pfizer PFIZER LABORATORIES, *Brooklyn 6, New York*
Division, Chas. Pfizer & Co., Inc.

—Continued from page 189a

mitted through the fluid which is within a tiny tube placed in the heart itself. These vibrations are picked up at the end of the catheter, are amplified and filtered, and recorded by means of a special electric circuit. The tracing of the heart sounds and murmurs can, in this way, be done in routine catheterization of either the right or left heart. The method is now routinely used in the Chicago Medical School's Division of Cardiology at Mount Sinai Hospital whenever a cardiac patient is studied by means of catheterization.

The same research team has also developed a system for recording electrocardiograms from inside the heart. This again, had heretofore been possible only from the right heart and by means of a special tube. The new method consists of utilizing the fluid within the catheter which is able to conduct electricity since it is a saline fluid. Electrical waves are picked up from the end of the catheter in either the right or left heart during a routine catheterization.

Pregnancy Complications Cause Reading Disorders

Premature births and complications during pregnancy may be factors in causing reading disorders among children.

This theory was advanced by Drs. Ali A. Kawi of New York and Benjamin Pasamanick of Columbus, Ohio, in a recent issue of the *Journal of the* A.M.A.

Following a controlled study of 205 boys, ranging in age from 10 to 14 years, with known reading disorders, the doctors observed, "Children with reading disorders had a significantly larger

—Continued on page 194a

new *orally* potent narcotic analgesic

'LERITINE'
ANILERIDINE

unsurpassed even for

intense pain

- orally potent
- consistently gives profound relief
- minimal side effects

Additional information to physicians on request.
Subject to Federal Narcotic Law.
LERITINE is a trade-mark of Merck & Co., Inc.

MSD MERCK SHARP & DOHME
DIVISION OF MERCK & CO., Inc., PHILADELPHIA 1, PA.

on the problem of antibiotic-resistant bacteria



A POINT OF VIEW IN '55 "At this time, it appears that the problem of antibiotic-resistant bacteria is the greatest fear in the future with chronic infections of the . . . urinary tract . . ."[1]

A POINT OF FACT IN '58 ". . . This prediction has proved to be correct for both gram-positive and gram-negative organisms."[2]

. . . WITH ONE NOTABLE EXCEPTION ". . . studies indicate that micro-organisms, in vitro and in vivo, do not appear to develop resistance to FURADANTIN."[3]

for acute and chronic urinary tract infections

FURADANTIN®

brand of nitrofurantoin

AVERAGE FURADANTIN DOSAGE: In acute, complicated or refractory cases and in chronic infections—100 mg. q.i.d., with meals and with food or milk on retiring.

REFERENCES: 1. Flippin, H. F.: Virginia M. Month. 82:435, 1955. 2. Caswell, H. T. et al.: Surg. Gyn. Obst. 106:1, 1958. 3. Nesbitt, R. E. L. Jr., and Young, J. E.: Obst. Gyn., N. Y. 10:59, 1957.

NOW, for hospitalized patients, for severe urinary tract infections when peroral administration of FURADANTIN is not feasible and for serious infections as septicemia (bacteremia): **FURADANTIN** *Intravenous Solution*



NITROFURANS . . . a *new* class of antimicrobials . . . neither antibiotics nor sulfonamides



EATON LABORATORIES, NORWICH, NEW YORK

The facts behind the Burton, Parsons label*



COMPOSITION . . . Coating of blond psyllium refined to unique particle size and dispersed in lactose and dextrose.

RATIONALE . . . Supplies bulk, consisting of naturally occurring hemicelluloses which disperse with intestinal contents to form a softly compact, well formed stool of physiological consistency.

INDICATIONS . . . Chronic constipation, non-specific diarrheas, following ano-rectal surgery, and whenever normal stools are desirable.

CONTRAINDICATIONS . . . Intestinal obstruction of organic origin.

DOSAGE . . . 3/4 t.i.d. in glass of water, milk, or fruit juice (palatability unsurpassed).

for clinical trial sample packages, send to

BURTON, PARSONS & COMPANY
Originators of Fine Hydrophilic Colloids
WASHINGTON 9, D.C.

NEWS AND NOTES

—Continued from page 192a

proportion of premature births and abnormalities of the prenatal and paranatal periods than other control subjects."

Brain damage during pregnancy has been a factor in fetal deaths and it is known that such brain damage plays an important part in cerebral palsy, epilepsy, mental deficiency, and behavior disorders in childhood, the doctors said.

Since the brain plays a major role in our ability to read it was natural to assume that such damage to the brain during pregnancy could contribute to reading disorders in children.

This study, involving only boys, was conducted in Baltimore and included 205 children with reading disorders and a similar number, in the same age category, with normal reading behavior.

In addition to basic identification, the examiners obtained birth certificates, clinical information, and complete hospital birth records of each child studied.

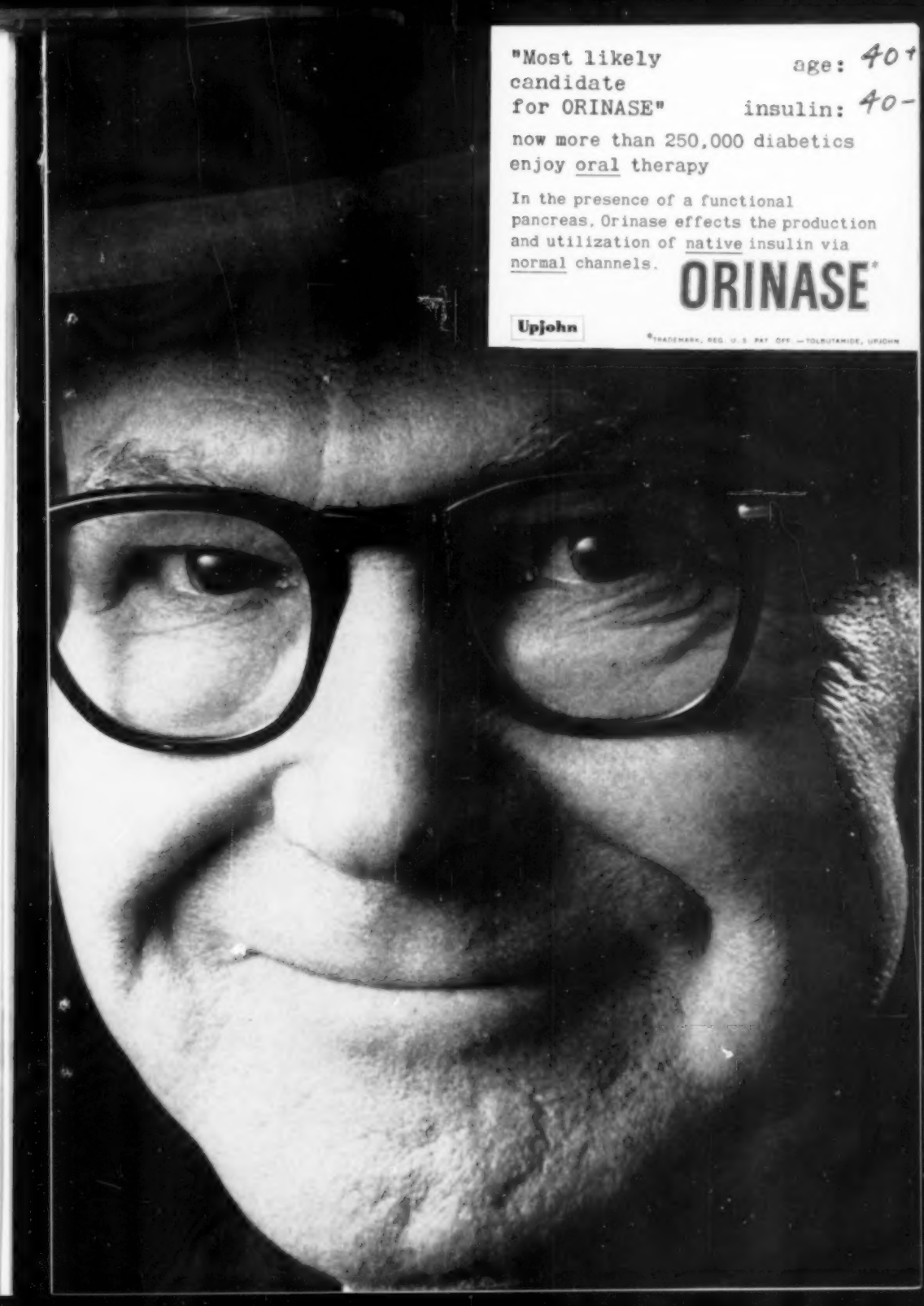
The doctors found that "a total of 104 complications occurred among the group with reading disorders, as contrasted with 50 in the control group."

"Of the children with reading disorders, 16.6 per cent had been exposed to two or more maternal complications, as compared to 1.5 per cent among the controls," the doctors said.

Maternal complications appearing to be highly associated with reading disorders, according to the doctors, are "preeclampsia, hypertensive disease, and

—Continued on page 196a

WHAT'S THE DOCTOR'S NAME?
The doctor was Nostradamus.
(from page 51a)


"Most likely
candidate
for ORINASE"
age: 40+
insulin: 40-
now more than 250,000 diabetics
enjoy oral therapy
In the presence of a functional
pancreas, Orinase effects the production
and utilization of native insulin via
normal channels.
ORINASE*
Upjohn
*TRADEMARK, REG. U. S. PAT. OFF. — TOLBUTAMIDE, UPJOHN

—Continued from page 194a

bleeding during pregnancy." The three tend to produce an oxygen deficiency, the doctors said.

Since premature infants are more susceptible to oxygen deficiencies, it is interesting to note that 11.5 per cent of those children with reading disorders had been born prematurely. This compares with only 4.6 per cent of premature births in the control group. These premature percentages include only surviving infants.

As a result of their study the doctors concluded that the age of the mothers, number of previous pregnancies, length of labor, and the type of delivery are not contributing factors in reading disorders.

In the future, the doctors felt "efforts must be directed toward the eradication of maternal and fetal abnormalities, since these not only influence infant loss but also appear to have an effect on the surviving infant." This can be done, they added, by preventive measures and improved treatment during pregnancy.

Blood Studies by Massachusetts Group

A research group from the Harvard Medical School, the Peter Bent Brigham Hospital and Boston University School of Medicine have reported on studies which speed the return of stored blood to full effectiveness. Dr. Searle B. Rees and his associates explained how, with radioisotopes, they were able to examine the manner in which the red cells in stored blood regain the potassium they lose at blood bank temperatures.

When whole blood is chilled and stored in blood banks, potassium concentrated in the red cells gradually moves out into the surrounding plasma and is replaced by sodium. When the blood is rewarmed, the potassium slowly moves back into the red cells, replacing the sodium and restoring the sodium-potassium ratio to normal levels.

Using radioactive potassium, the group were able to return the blood to body temperature after various periods of storage and could measure the rate of movement of potassium back into the cells. They found that the food supplied to the cells made a great difference in the speed of potassium-sodium transfer. When glucose was added to blood which had been stored for periods up to two weeks, the red cells effectively took up the potassium when the chilled serum was returned to body temperature. But in blood stored longer than two weeks, the red cells failed to do well on glucose alone. However, when supplied with superior energy sources as inosine or adenosine, the red blood cells were able to continue the process of taking up and storing potassium after the two-week

—Continued on page 200a

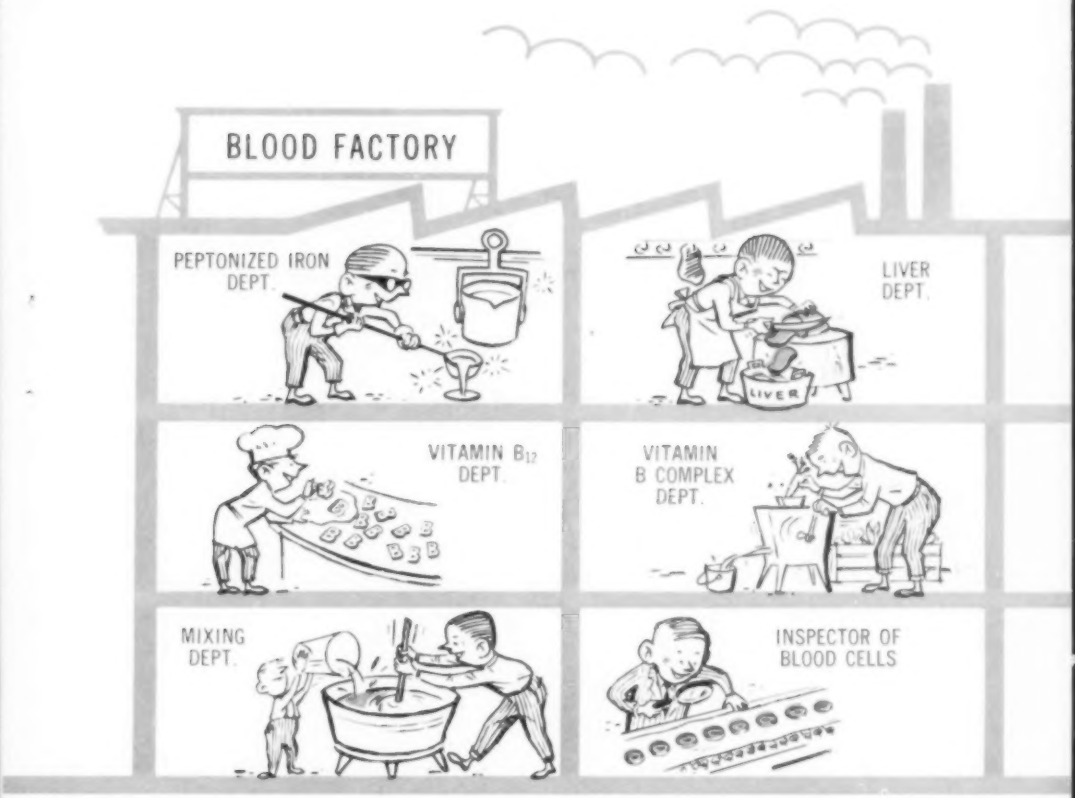
Diagnosis, Please

TUBERCULOSIS

ANSWER

(from page 33a)

Note irregularity of calices with narrowing of the infundibula, some of which are cut off. There are also multiple areas of papillitis, especially near the upper pole, with small areas of calcification.



The preferred hematinic with PEPTONIZED *iron*

LIVITAMIN®

Peptonized iron is virtually predigested. It is absorbed as well as ferrous sulfate, and is one-tenth as irritating to the gastric mucosa. Anemias refractory to other forms of iron will often respond promptly to Livitamin therapy.

The Livitamin formula, containing the B complex, provides integrated therapy to correct the blood picture, and to improve appetite and digestion.

Each fluidounce contains.

Iron peptonized	420 mg.
(Equiv. in elemental iron to	71 mg.)
Manganese citrate, soluble	158 mg.
Thiamine hydrochloride	10 mg.
Riboflavin	10 mg.
Vitamin B_{12} Activity (derived from Cobalamin conc.)	20 mcg.
Nicotinamide	50 mg.
Pyridoxine hydrochloride	1 mg.
Pantothenic acid	5 mg.
Liver fraction 1	2 Gm.
Rice bran extract	1 Gm.
Inositol	30 mg.
Choline	60 mg.

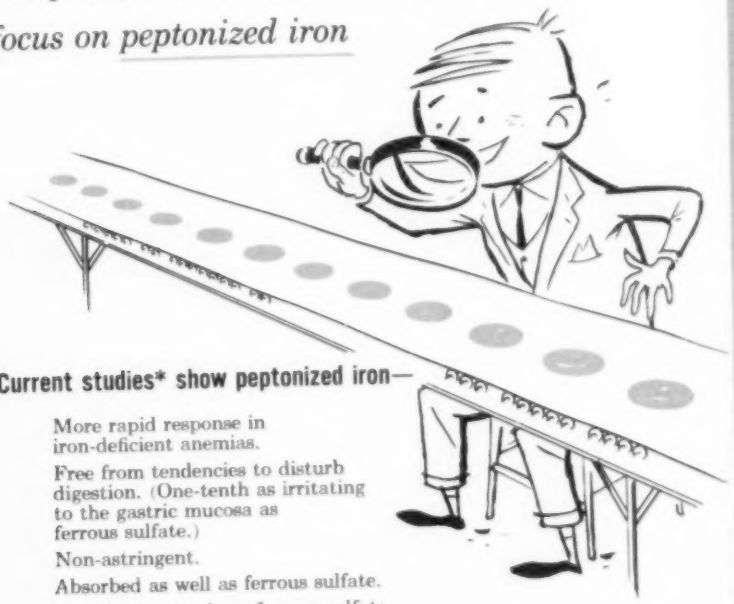
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For predictable therapeutic advantages . . .

focus on peptonized iron



Current studies* show peptonized iron—

More rapid response in iron-deficient anemias.

Free from tendencies to disturb digestion. (One-tenth as irritating to the gastric mucosa as ferrous sulfate.)

Non-astringent.

Absorbed as well as ferrous sulfate.

One-third as toxic as ferrous sulfate.

LIVITAMIN® with Peptonized Iron

*Keith, J.H.: Utilization and Toxicity of Peptonized Iron and Ferrous Sulfate, Am. J. Clin. Nutrition *1*:35 (Jan.-Feb., 1957).

Currently, mailings will be forwarded only at your request. Write for samples and literature.

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BAKER'S MODIFIED MILK

A complete formula in liquid and powder form prepared exclusively from Grade A Milk

- **Protects Normal Skin Integrity**
- **Assures Optimal Caloric Utilization**

Recent work has pointed out that linoleic acid plays a significant metabolic role in infant nutrition. Too low an intake results in dryness, thickening and leathering of the skin,[1] and an increased caloric consumption.[2]

In Baker's Modified Milk the troublesome butterfat has been entirely replaced with easily digested corn and cocoanut oils, which provide five times the amount of linoleic acid in cow's milk formulas.

Infants fed on Baker's Modified Milk are protected against eczematous and other dermatologic conditions caused by lack of linoleic acid, and are also assured optimal caloric utilization.

Prescribe Baker's Modified Milk to protect skin integrity and assure optimal caloric utilization.

(1) Hansen, A. E., et. al.: Fed. Proc. *16:* 387, 1957.
(2) Hansen, A. E.: Pediat. *21:* 494, 1958.

Other Products — VARAMEL — a scientifically formulated evaporated milk product prepared exclusively from Grade A Milk.

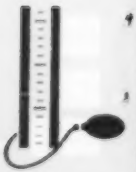
The **Baker** Laboratories, Inc. • **Cleveland 3, Ohio**

Milk Products Exclusively for the Medical Profession

for management
of the hypertensive syndrome—
emotional and vascular



EQUA



Wyeth
®
Philadelphia 1, Pa.

- **treats the patient and his pressures**
- **achieves and enhances his symptomatic relief**
- **may lessen certain by-effects of ganglionic blockade**

LYSEN*

Meprobamate and Pentolinium Tartrate, Wyeth

*Trademark

EQUALYSEN reduces the "tensions" of high blood pressure. It lowers blood pressure, relieves emotional symptoms, and enhances the over-all clinical response. The one preparation provides balanced therapy by the combined use of meprobamate and pentolinium. The pentolinium component returns the pressure toward normal and alleviates manifestations of hypertension. The meprobamate component relaxes emotional and muscular tensions, enhances symptomatic response, and may minimize certain by-effects of ganglionic blockade by reducing necessary dosage of pentolinium. The total benefits have wide significance in antihypertensive management, particularly in elderly patients.[1]

Supplied: Scored tablets, bottles of 50. Each tablet contains 200 mg. of meprobamate (EQUANIL®) and 20 mg. of pentolinium tartrate (ANSOLYSEN® Tartrate).

1 Fulton, L.A., et al.: Am. Pract. & Digest Treat. *8*:1376 (Sept.) 1957.

—Continued from page 196a

period had passed. Other investigators have shown that inosine and adenosine could revive blood after storage, lengthening the period over which it could be stored, and adding to its effectiveness at the time of transfusion.

The research group believe that studies such as those reported on potassium movements into and out of red blood cells may help to reveal new ways of restoring potassium to other body cells which have been depleted by various diseases that have damaged vital cellular processes.

This project was financed and sponsored in part through grants from the National Institutes of Health and from the United States Army.

Study Shows Tranquilizer is Non-habit-forming

No habituation to the tranquilizer meprobamate developed among 60 state prison inmates given the drug during a recent study.

The results were contrary to expectations, according to an article by Dr. Austin R. Stough, McAlester, Okla., in a recent issue of the *Journal of the American Medical Association*.

"Because meprobamate (Miltown, Equanil) is widely used, it was considered desirable to evaluate the possibility of habituation among a prison population, in which a high incidence of susceptibiilty might normally be expected," Dr. Stough said.

The Oklahoma state prison inmates given the drug were considered to be highly unstable, with a history of injury, illness, or other physical or psychological abnormality. Several had once been addicted to narcotics or alcohol. Yet during the study none developed a "true habituation" in which they became physically or psychologically dependent on the drug.

In the current Oklahoma study the drug was given in two separate six-week tests. The first called for meprobamate to be administered in dosages far in excess of amounts needed to allay symptoms, followed by abrupt withdrawal.

During the second phase, the drug was given in dosages more commonly used followed by gradual withdrawal.

Results of both tests showed that the patients had returned to pretreatment status within 48 hours after withdrawal, including recurrence of previous psychosomatic symptoms from illness, Dr. Stough said.

It was noted that a small percentage of those undergoing the tests had an undesirable reaction to abrupt with-

—Continued on page 206a

WHAT'S YOUR VERDICT?

(from page 37a)

The Supreme Court affirmed the jury's verdict, holding: "Not all contracts are purely commercial in their nature. Some involve rights we cherish, dignities we respect, emotions recognized by all as both sacred and personal. In such cases the award of damages for mental distress and suffering is a commonplace, even in actions ex contractu."

Based on decision of
Supreme Court of Michigan

Antibacterial / Anti-inflammatory

'CORTISPORIN'® Otic Drops

BRAND

- Relieves "incessant itching" and inflammation.
- Eradicates *Pseudomonas* and other common causes of otitis.
- Helps restore normal acid mantle.
- ***Rarely sensitizes.***

Contains: 'Aerosporin'® Sulfate Polymyxin B Sulfate, Neomycin Sulfate and Hydrocortisone (free alcohol) in a sterile, slightly acid, aqueous suspension.

Available in dropper bottles of 5 cc.



Specific therapy for most inflamed and infected ears

Antibacterial / Antifungal

'AEROSPORIN'® Otic Solution

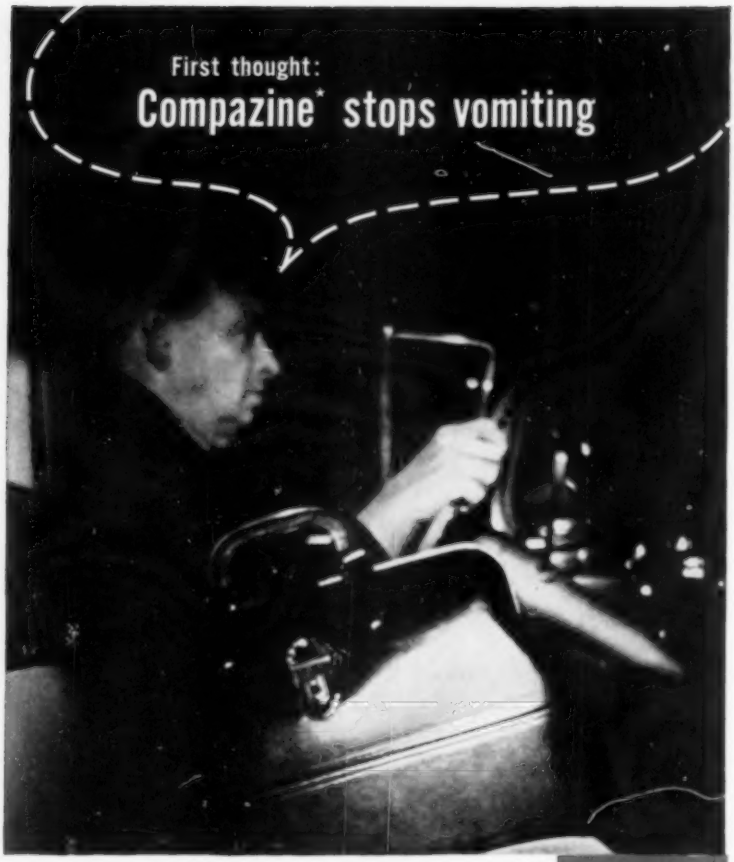
BRAND

- Counteracts "sogginess" of ear canal.
- Eradicates *Pseudomonas* and other common causes of otitis.
- Antifungal for *Monilia* and *Aspergillus*.
- Helps restore normal acid mantle.
- ***Rarely sensitizes.***

Contains: 'Aerosporin'® Sulfate Polymyxin B Sulfate in Propylene Glycol with 1% Acetic Acid.

Available in dropper bottles of 10 cc.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.



new! multiple dose vials

for immediate effect—
always carry one in your bag



Also available: tablets, ampuls, Spansule® sustained release capsules, syrup and suppositories.

Smith Kline & French Laboratories, Philadelphia

★T.M. Reg. U.S. Pat. Off. for prochlorperazine, S.K.F.

long day ahead
morning sun glare – eyes irritated
can't read – coach smoky
leave the work – let's lunch
back to work – eyes worse
take afternoon off – see doctor
pick up VISINE – home again
let's try the drops
nice dinner – read the paper
eyes comfortable – good TV play
use VISINE – bed 11:30
long day behind
turned out well **see the difference**



new VISINE* EYE DROPS

BRAND OF TETRAHYDROZOLINE HYDROCHLORIDE

"an excellent ophthalmic decongestant . . ."[1]

almost immediate relief of hyperemia, soreness, itching, burning, tearing — no rebound vasodilatation, mydriasis, photophobia or systemic effects. */supplied: in 1/2 oz. bottles, 0.05% tetrahydrozoline hydrochloride in a solution containing sodium chloride, boric acid, sodium borate; with sterile eye dropper.*

1. Grossmann, E. E., and Lehman, R. H.: Am. J. Ophth. 42:121, 1956.

Pfizer PFIZER LABORATORIES *Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York*

*Trademark

premenstrual

'DIURIL'

(CHLOROTHIAZIDE)

FORD, R. V., Rochelle, J.B.III, Handley, C. A., Moyer, J. H. and Spurr, C. L.: J.A.M.A. **166**:129, Jan. 11, 1958.

". . . in premenstrual edema, convenience of therapy points to the selection of chlorothiazide, since it is both potent and free from adverse electrolyte actions." In the vast majority of patients, 'DIURIL' relieves or prevents the fluid "build-up" of the premenstrual syndrome. The onset of relief often occurs within two hours following convenient, oral, once-a-day dosage. 'DIURIL' is well tolerated, does not interfere with hormonal balance and is continuously effective—even on continued daily administration.

DOSAGE: one 500 mg. tablet 'DIURIL' daily—beginning the first morning of symptoms and continuing until after onset of menses. For optimal therapy, dosage schedule should be adjusted to meet the needs of the individual patient.

SUPPLIED: 250 mg. and 500 mg. scored tablets 'DIURIL' (chlorothiazide); bottles of 100 and 1,000.

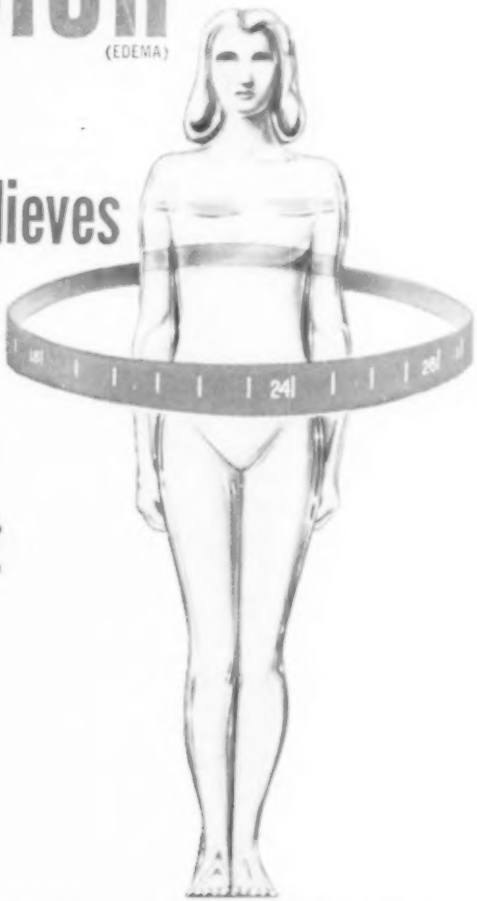
DIURIL is a trade-mark of Merck & Co., Inc.

MERCK SHARP & DOHME Division of MERCK & CO., Inc., Philadelphia 1, Pa. MSD

tension

(EDEMA)

quickly relieves
Distress
Distention
Discomfort



ANY INDICATION FOR DIURESIS IS AN INDICATION FOR 'DIURIL'

—Continued from page 200a

drawal. This was particularly apparent in persons with serious nervous disorders.

Dr. Stough concluded that gradual withdrawal of any tranquilizer is recommended. Thus, return to pre-treatment symptoms, if it occurs, will be gradual, and the patient will adjust with less difficulty.

A.M.A. Drafts New Guide to Define Forms of Disability

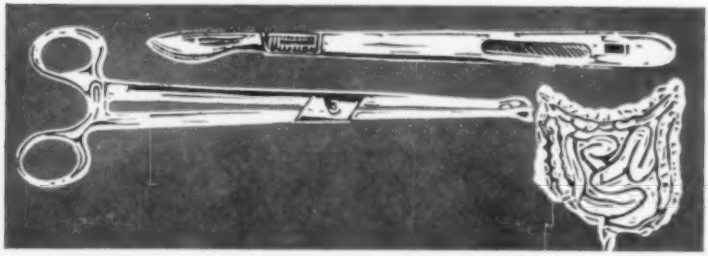
The American Medical Association has announced publication of an important new document: a guide for physicians' use in medically rating persons under disability programs.

From a medical standpoint, the guide is important because evaluation or rating of permanent disability has long been recognized as a complex subject. In the past much confusion has resulted from inadequate understanding by physicians and others of:

1. The scope of *medical* responsibility in evaluation of permanent disability, and 2. The difference between "permanent disability" and "permanent impairment."

The preface of the guide states: "It is vitally important for every physician to be aware of his proper role in the evaluation of permanent disability under any private or public program for the disabled. It is equally important for him to have the necessary authoritative material to assist him in competently fulfilling his particular responsibility—

—Continued on page 208a



SULFASUXIDINE®

SUCCINYLSULFATHIAZOLE

A "STANDARD" IN BOWEL SURGERY

Many years of widespread use have demonstrated the importance of SULFASUXIDINE in bowel surgery. It minimizes the danger of infection by producing a low bacterial count in the gut and reduces incidence of flatulence. Normal healing is encouraged.

Available as 0.5 Gm. tablets in bottles of 100 and 1000; powder form in 1-pound bottles.

Sulfasuxidine is a trade-mark of Merck & Co., Inc.

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PYRIDIUM® RELIEVES PAIN PROMPTLY

BRAND OF PHENYLAZO-DIAMINO-PYRIDINE HCl

fills the gap between complaint and correction of urinary tract disorders. In 20-25 minutes, Pyridium gives relief of urinary tract symptoms, even before the cause can be effectively treated. Diagnosis, antibacterial action or surgery may take time—but pain relief can be immediate with Pyridium, the standard urinary tract analgesic. **WARNER-CHILCOTT**



NEW!
PYRIDIUM®
TRI-SULFA
(phenylazo-diamino-pyridine)
controls infection
relieves pain promptly
with only 1 tab. q.i.d.

NEWS AND NOTES

—Continued from page 206a

the evaluation of permanent impairment."

The guide defines the following generally-used terms in programs for the disabled:

"1. *Permanent Disability.* This is not a purely medical condition. A patient is 'permanently disabled' or 'under a permanent disability' when his actual or presumed ability to engage in gainful activity is reduced or absent because of 'impairment' and no fundamental or marked change in the future can be expected.

"2. *Permanent Impairment.* This is a purely medical condition. Permanent impairment is any anatomic or functional abnormality or loss after maximal medical rehabilitation has been achieved and which abnormality or loss the physician considers stable or non-progressive at the time evaluation is made. It is always a basic consideration in evaluation of permanent disability. It should be remembered, however, that permanent impairment is a contributing factor to, but not necessarily an indication of, the extent of a patient's permanent disability.

"3. *Evaluation (Rating) of Permanent Disability.* This is an administrative, not medical, responsibility and function. Evaluation of permanent disability is an appraisal of the patient's present and probable future ability to engage in gainful activity as it is affected by non-medical factors such as age, sex, education, economic and social environ-

—Continued on page 210a

Only the LENIC™ complex
provides all five essential polyunsaturated fatty acids

Lenic capsules to lower cholesterol levels and for prophylaxis.

Lenic capsules with niacin to lower cholesterol levels rapidly when coronary disease is indentifiable.

• low dose
• easy to take

Lenic vitamin-mineral capsules for complete daily nutritional support in adult patients.

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NEW–

CONTROLS DEPRESSION WITHOUT STIMULATION

Relieves depression without masking it with artificial elation Restores natural sleep without depression-producing aftereffects Reduces depressive rumination Often makes electroshock therapy unnecessary Deprol acts promptly and has a simple dosage schedule. *No known liver toxicity. No effect on blood pressure, appetite. No effect on sexual function.*



Deprol

Side effects are minimal and easily controlled by dosage adjustment. Does not interfere with other drug therapy.

Composition: Each tablet contains 400 mg. meprobamate and 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl).

Recommended Starting Dose: 1 tablet q.i.d.

Reference: *Alexander, L.: Chemotherapy of depression—Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. 166:1019, March 1, 1958.*

Literature and samples on request

WALLACE LABORATORIES
New Brunswick, N. J.

—Continued from page 208a

ment and the medical factor—permanent impairment. Non-medical factors have proved extremely difficult to measure. For this reason 'permanent impairment' is in fact the sole or real criterion of 'permanent disability' far more often than is readily acknowledged. Evaluation of permanent disability forms the basis for a determination of permanent disability which is an administrative decision as to the patient's entitlement.

"4. *Evaluation (Rating) of Permanent Impairment.* This is a function which physicians alone are competent to perform. Evaluation of permanent impairment defines the scope of medical responsibility and therefore represents the physician's role in the evaluation of permanent disability. Evaluation of permanent impairment is an appraisal of the nature and extent of the patient's illness or injury as it affects his personal efficiency in the activities of daily living. These activities are self care, normal living postures, ambulation, elevation, traveling, and non-specialized hand activities. It is not and never can be the duty of physicians to evaluate the social and economic effects of permanent impairment. These effects must be evaluated by administrators in making determinations of permanent disability.

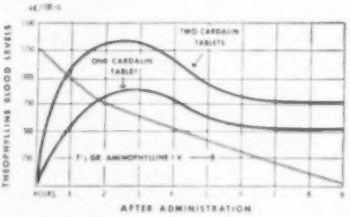
"Competent evaluation of permanent impairment requires adequate and complete medical examination, accurate ob-

—Continued on page 214a

Originated by Neisler Research

Truly therapeutic and prolonged theophylline blood levels produced *orally* without gastric irritation

Cardalin utilizes two protective factors* to permit administration of high oral doses of aminophylline without the usual side effects of nausea, gastric irritation and vomiting.



(Adapted from Bickerman, H. A., *et al.*: Ann. Allergy 11:301, 1953, and Truitt, E. B., Jr., *et al.*: J. Pharmacol. & Exper. Therap. 100:309, 1950.)

CARDALIN

. . . proven effective clinically whenever high blood concentrations of aminophylline are desired . . . as in congestive heart failure, cardiac edema, paroxysmal dyspnea, angina pectoris, myocardial infarction, heart block and bronchial asthma.

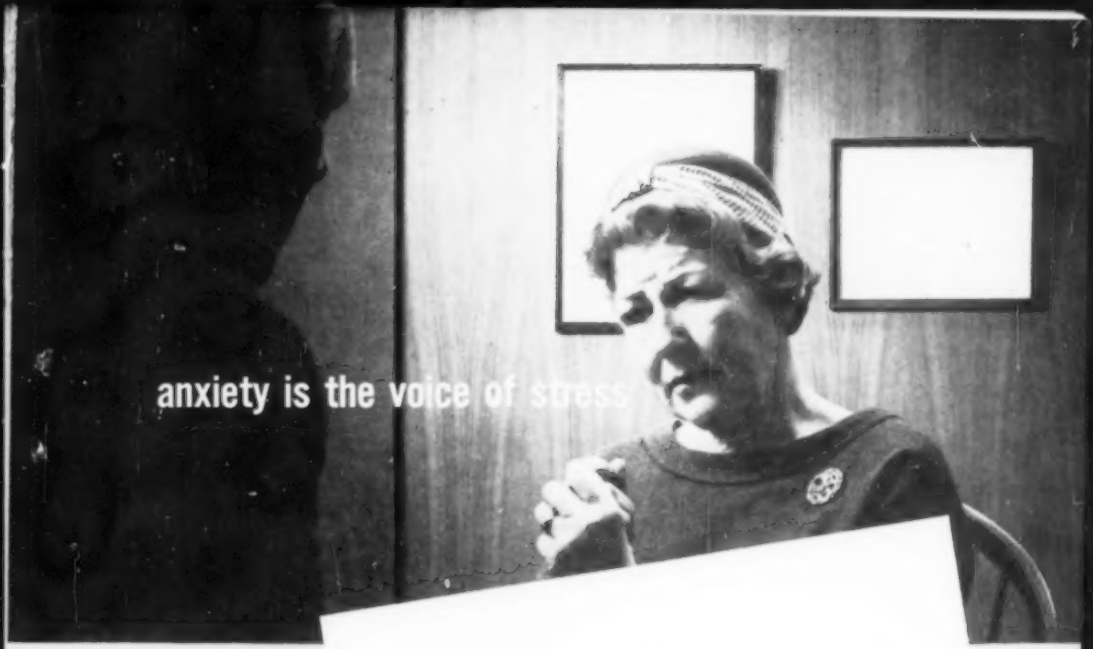
*PATENT No. 2,667,439

Each Cardalin tablet supplies: Aminophylline, 5.0 gr.; Aluminum hydroxide, 2.5 gr.; Ethyl aminobenzoate, 0.5 gr.

Also available, Cardalin-Phen.

To serve your patients today—call your pharmacist for any additional information you may need to prescribe Cardalin. For prescription economy, prescribe in 50's.

Neisler Irwin, Neisler & Co. • Decatur, Illinois



Representative Case Report:

Mrs. N.F., aged 43—panhysterectomy

Anxiety, insomnia, and emotional instability complicating preparation for surgery. For psychic support, EQUANIL therapy was started ten days before operation. The tension symptoms diminished, and the patient became cooperative. Postoperatively, the drug was continued, maintaining the patient's emotional equilibrium and thereby accelerating convalescence.

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A Wyeth normotropic drug for nearly every patient under stress

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Relieves tension—mental and muscular



Give your patient that extra lift with "Beminal" Forte

Insure adequate nutrition of patients on special diets or when high B and C levels are needed

new improved formula **"BEMINAL" Forte with Vitamin C**

An increase in vitamin C content from 150 mg. to 250 mg. plus massive doses of B factors provide a truly high B and C formula to speed the process of tissue repair.

Supplied: No. 817 — Bottles of 100 and 1,000 capsules.

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Within the dermal papillae beneath the epithelium are Meissner's touch corpuscles—cylindrical bodies that help account for the acuity of the tactile mechanism. For the sense of pressure and heat, the sensitive somesthetic system is rounded out by Pacini's corpuscles and Ruffini's spindles.

"Built-in" *sensitivity* identifies every RAMSES® unexcelled rubber prophylactic. RAMSES are preferred by many men because they are transparent, naturally smooth, demonstrably thin, yet strong . . . designed for fullest sensitivity. Many physicians now specify prophylactics routinely in the presence of trichomoniasis, to prevent conjugal transmission.



THE ANATOMY OF TOUCH

". . . Trichomonas vaginalis in the male is the principal factor of re-infection in the female. . . ."[1] The husbands will cooperate readily in the treatment plan for wives when you acquaint them with RAMSES, the prophylactic with "built-in" sensitivity.



1. Feo, L. G., et al.: J. Urol. 75:711 (April) 1956.

RAMSES® *prophylactics*

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423 West 55th Street, New York 19, N. Y.

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—Continued from page 210a

jective measurement of function, and avoidance of subjective impressions and non-medical factors such as the patient's age, sex, or employability.

"The Committee on Medical Rating of Physical Impairment believes that permanent impairment cannot vary because of the circumstances of its occurrence or the geographic location of the patient at the time. Furthermore, unlike disability, permanent impairment can be measured with a reasonable degree of accuracy and uniformity on the basis of impaired function as evidenced by loss of structural integrity, pathology, or pain substantiated by clinical findings."

Automation Contributing To Obesity Problem

Automation may have its advantages but it is causing a major problem in the field of medicine.

More and more people are tending to become overweight as a result of our new sedentary life which provides more leisure time with less heavy physical work, according to Dr. Robert H. Barnes, of Seattle.

Writing in a recent issue of the *Journal of the A. M. A.*, the University of Washington School of Medicine doctor said, "Reduction and permanent weight control require healthy changes in living habits."

In addition to physical examinations and general health evaluation, a physician today must also concern himself with the patient's personal living habits if he is to recommend an effective reducing program.

"Usual eating habits and average daily physical activity are two of the most important points to be explored," said Dr. Barnes. He added, "There is no single approach to the treatment of obesity, only lifetime control."

A special weight history should be the first step in determining a program to bring long-term results. This history will give an index of past and present weight, maximum weight, and estimated ideal weight.

The second step is to modify the way of eating, which must be designed to be followed during the patient's lifetime. This approach is more satisfactory on the long-range basis than the conventional rigid diet, Dr. Barnes said.

Lowering the caloric intake is necessary for anyone to reduce. Despite the fact that dieting alone has been a failure, it is still the principle support in reducing, he said.

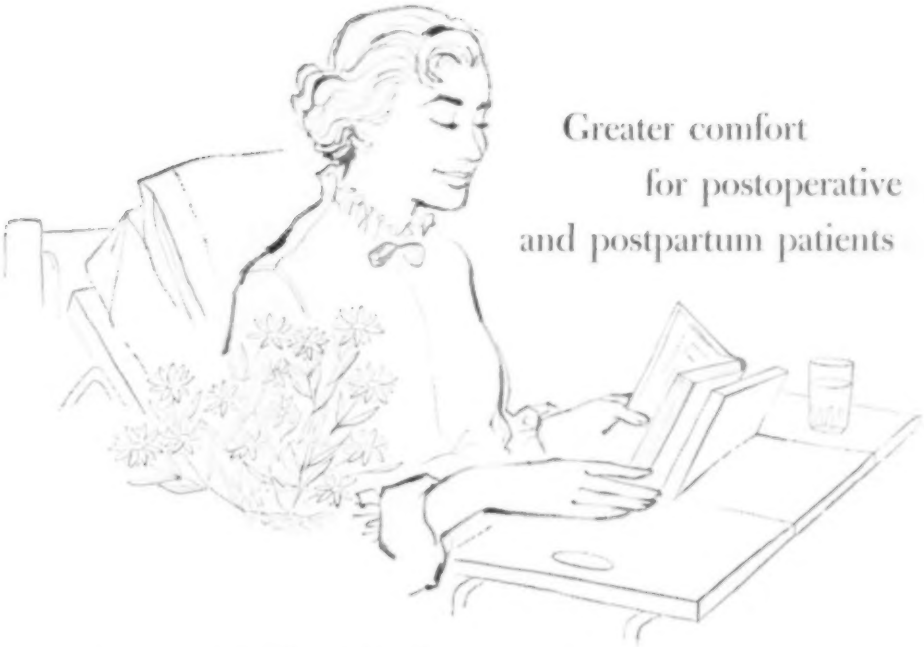
In setting up a diet, the patient's working facilities, meal hours, family

—Continued on page 216a

MEDICAL TEASERS

Solution to puzzle on page 47a





Greater comfort
for postoperative
and postpartum patients

abdominal distention and urinary retention
can often be prevented or promptly relieved
—with less need for uncomfortable enemas and catheters

Urecholine.

Chloride
(Bethanechol Chloride)

'Urecholine' helps restore normal function after surgery and childbirth by increasing the muscular tone of the gastrointestinal and urinary tracts. Postoperative "gas" pains can frequently be prevented or promptly relieved—with less need for uncomfortable enemas, intubation, and suction apparatus. Micturition is facilitated—without the discomfort and risk of infection inherent in catheterization.

Administration and dosage: may be given prophylactically or therapeutically after surgery or childbirth. Usual oral dosage: 10 to 30 mg. three or four times daily. Usual subcutaneous dosage: 5 mg. three or four times daily.

Other indications: gastric atony and retention following vagotomy and other surgical procedures; chronic functional urinary retention due to atony without obstruction; megacolon, including congenital megacolon (Hirschsprung's disease); certain cases of paralytic ileus; to counteract side effects of antihypertensive ganglionic blocking drugs.

Supplied: 5 mg. and 10 mg. tablets, bottles of 100;
1-cc. ampuls containing 5 mg.

Urecholine is a trade-mark of MERCK & CO., Inc.

MERCK SHARP & DOHME, DIVISION OF MERCK & CO., Inc., PHILADELPHIA 1, PA.

—Continued from page 214a

food patterns, and income level must all be considered.

Additional steps in the program should include the use of medication (dispensed under a physician's supervision), exercise, and posture control.

He noted, "Moderate exercise, month in and month out, can be the difference between following a starvation regimen and being able to follow a more normal diet according to one's appetite.

"Here again modern civilization makes it difficult for the overweight patient to do regular exercising such as walking. The habit of riding everywhere, even three blocks to the store, has depressed the physical activity of many to a very low state."

Sulpho-lac

The LOGICAL TREATMENT For ACNE

Samples on request.

KELGY LABORATORIES

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There should also be developed a close relationship between doctor and patient, for, according to Dr. Barnes, "The patient should realize that he is under the care of a physician not only to lose weight but also to have treated the associated medical disorders common to obesity which commercial reducing salons are admittedly incapable of recognizing and treating."

Medical Care for American Indians

In conjunction with the US Public Health Service, staff members of the Creighton University School of Medicine will help care for indigent Indians in Nebraska and nearby states. Members from the Creighton School now make regular visits to the Winnebago Hospital at Winnebago, Nebraska for consultation on diagnostic problems of Indians. This institution serves as hospital headquarters for the entire Aberdeen Indian Area comprised mainly of six tribes from reservations in Nebraska, North Dakota, South Dakota, Minnesota, Iowa, and parts of Wisconsin. After diagnosis, many of the patients are sent to hospitals nearer their homes for further care. In addition many of the sick, mostly ambulant patients, are brought to the Creighton University Medical Dispensary for diagnosis and treatment. Dr. Richard L. Egan, Assistant Dean of the Medical School, estimates that approximately 60 such patients receive care at the Dispensary each month. Those needing hospitalization of a nature that cannot be provided at Winnebago or other reservation hospitals are admitted to one of the Creighton-affiliated teaching hospitals.

Indians living on reservations are about two generations behind their fel-

—Concluded on page 218a



Perhaps the most effective sulfonamide available today for urinary infections

Continuing studies show that Elkosin is one of the safest and most useful antibacterial agents known today. For example: ". . . recently the results of sulfisomidine [Elkosin] therapy were evaluated in 55 additional patients with urinary tract infections. . . . 31 were cured; 4 showed a good response . . . With no attempt made to maintain an adequate daily fluid intake or alkalinization of the urine, no renal or hematopoietic toxicity occurred."*

For systemic infections, too, Elkosin therapy is sound therapy.

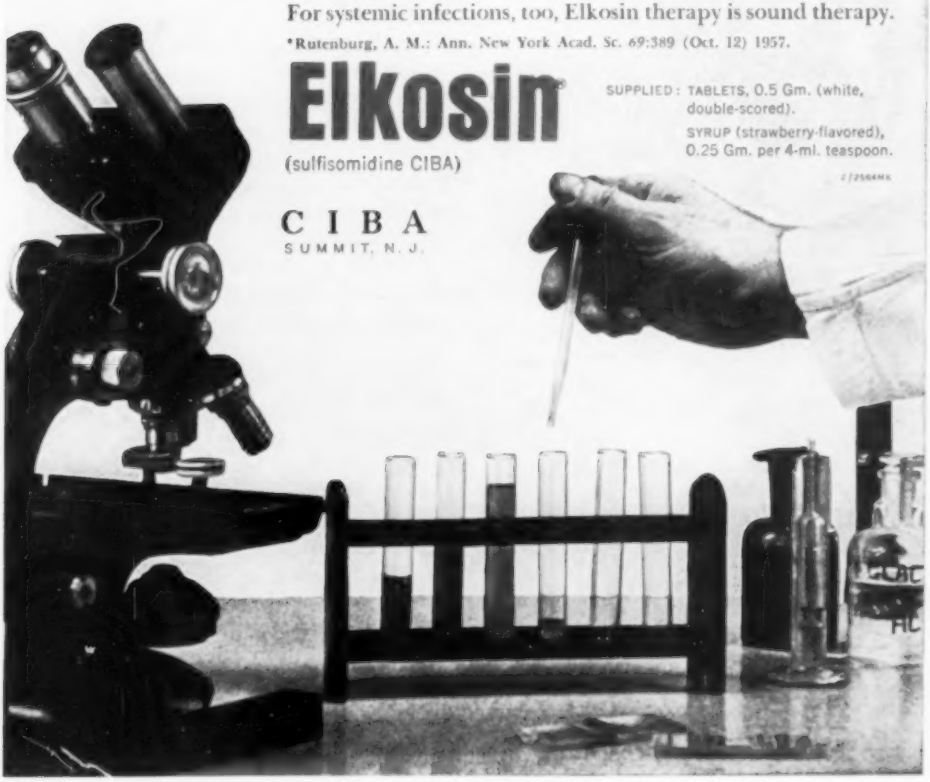
*Rutenburg, A. M.: Ann. New York Acad. Sc. 69:389 (Oct. 12) 1957.

Elkosin®

(sulfisomidine CIBA)

SUPPLIED: TABLETS, 0.5 Gm. (white, double-scored).
SYRUP (strawberry-flavored), 0.25 Gm. per 4-ml. teaspoon.

C I B A
SUMMIT, N. J.



—Concluded from page 216a

low Americans in health, according to a Public Health Service survey of Indian health problems. Their special problems are infectious and intestinal disorders, and respiratory diseases. Injuries from accidents are also prevalent. Most of the younger Indians speak English as it is spoken outside of their reservations—complete with all of the common slang and grammatical errors. However, some of the older residents do not understand English, and making a medical diagnosis requires an interpreter.

Course in Occupational Medicine

Occupational Medicine, a full-time course for practicing physicians, will be given for eight weeks from September 15 through November 7, 1958 by the New York University Post-Graduate Medical School. The course content covers the following areas: Preventive Medicine, including epidemiology and biostatistics; Administrative Medicine; Occupational Diseases, and Industrial Hygiene. It is aimed at meeting the need for specialized training in industrial medicine. Didactic instruction will be supplemented with field trips to industrial plants, governmental agencies concerned with industrial health and to union health centers. Opportunity will be given to attend medical, surgical, and clinicopathologic conferences held in the New York University-Bellevue Medical Center.



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You must be satisfied, or your money back — no obligation.

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Heart Study Allocations Announced

The American Heart Association and its Kansas affiliates have allocated $46,630 for heart research to be conducted by scientists at four Kansas research centers. Dr. Clarence W. Erickson, Chairman of the Kansas Heart Association's research committee, said that the state association has approved Grants-in-aid totaling $15,630 for heart studies to be conducted at research centers in Winfield, Manhattan, Emporia and Kansas City.

Dr. Edgar V. Allen, President of the American Heart Association, said that two physicians at the University of Kansas Medical Center have been awarded $16,000 in fellowships for their work in heart research. Additional research awards will be given to 155 scientists throughout the nation who will receive a total of $977,000 for a broad range of studies in the field of heart and blood-vessel diseases.



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TASHAN®
TO RELIEVE

- simple eczema
- dry, scaly skin
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- intertrigo, chapping
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- minor burns
- sunburn, windburn
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- diaper rash
- excoriation

These and many other superficial skin complaints usually respond dramatically to Tashan Cream Roche. Antipruritic, soothing and healing, Tashan contains vitamins A, D, E and *d*-panthenol, in a cosmetically pleasing, virtually non-sensitizing, water-soluble base.



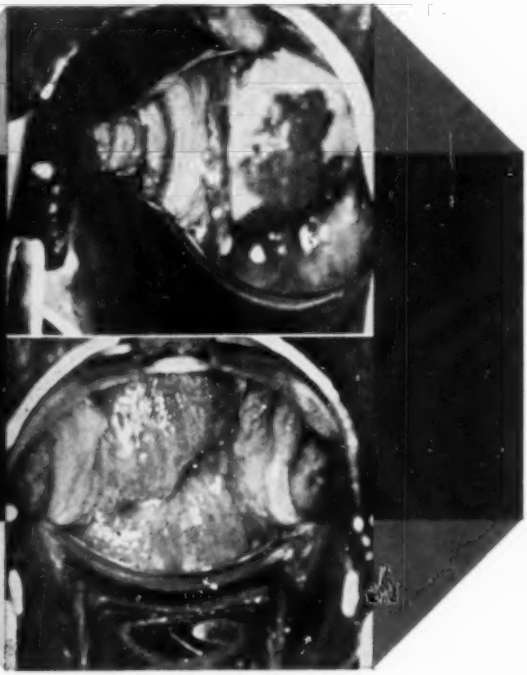
In 1-oz tubes and 1-lb jars.

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Roche—Reg. U. S. Pat. Off.

WHEN YOU
WANT EXCELLENT
RESULTS IN
MONILIAL
VAGINITIS



MYCOSTATIN

Squibb Nystatin

VAGINAL TABLETS

RESULTS:
"Of 96 patients with records suitable for tabulation, 85 had from good to excellent results."[1] In a group of 13 pregnant and 12 nonpregnant clinic patients "all patients were rapidly relieved of their symptoms, within 24 hours in most cases. . . . The writer has seldom been so rapidly convinced of the value of a new therapeutic agent."[2]

Mycostatin is the safe, highly effective antifungal antibiotic . . . with direct, specific action against monilia. When you use Mycostatin Vaginal Tablets for your patients with monilial vaginitis, your therapy can be 98.3% successful.[3] And your treatment will be clean—*without messiness or staining*—a point your patients will appreciate.

Each tablet contains 100,000 units of Mycostatin and 0.95 Gm. lactose. Packages of 15 with applicator; packages of 100 without applicator. Each tablet individually foil wrapped.

Therapy: 1 tablet intravaginally once to twice daily for 2 weeks, or as required.

You can also use Mycostatin Oral Tablets; Mycostatin Ointment; Mycostatin Dusting Powder; Mycostatin for Suspension.

1. Thomas, H. H.: Obstet. & Gynec. 9:163, 1957. 2. Browne, A. D. H.: J. Irish M.A. 40:86, 1957. 3. Pace, H. E., and Schantz, S. I.: J.A.M.A. 162:268, 1956.

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THE PRICELESS
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in angina pectoris

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Peritrate® with Nitroglycerin

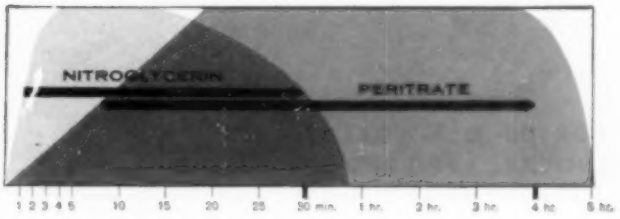
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Disintegrates completely in less than 5 seconds.

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When infections pose a dilemma

- Mixed infections
- Infections of unknown origin, prior to bacteriological identification
- Secondary bacterial invasions in upper respiratory tract infections
- Infections due to organisms more sensitive to combination therapy
- Urinary tract infections

Supplied:

Tablets, bottles of 36. For Suspension, bottles of 2 fl. oz. upon reconstitution. Each tablet and 5-cc. teaspoonful contains 125 mg. (200,000 units) of penicillin V (the Suspension containing the benzathine salt of penicillin V) and 0.25 Gm. each of sulfadiazine and sulfamerazine.



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Tablets: Penicillin V (Phenoxymethyl Penicillin) and Sulfonamides

For Suspension: Benzathine Penicillin V and Sulfonamides



topical bacteriostasis in oropharyngeal infections and following tonsillectomy



gratifying pain relief

ORABIOTIC provides prompt and prolonged relief of irritated or inflamed mucosal surfaces of the mouth and throat. The topical analgesic action of Propesin is superior to that of benzocaine and does not numb the sense of taste.

In addition, ORABIOTIC contains Neomycin and Gramicidin for effective action against gram-positive and gram-negative bacteria responsible for most oropharyngeal infections. These antibiotics are virtually non-irritating and non-sensitizing.

Chewing ORABIOTIC stimulates the flow of saliva which, laden with these medications, acts like a "bacteriostatic bath" over the entire oropharyngeal mucosa.[1] Chewing and swallowing also exercise throat muscles, relieve local postoperative muscle stiffness.

Clinically ORABIOTIC has been found remarkably effective in post-tonsillectomy care. Secondary hemorrhage—the recognized sequel of local infection—occurred in less than 1% of 283 patients given ORABIOTIC routinely after tonsil surgery.[1,3] Tonsillar fossae were unusually clean and free from malodor and pain.

FORMULA: Each delicious, cherry-flavored chewing gum troche contains 3.5 mg. Neomycin (from sulfate), 0.25 mg. Gramicidin, and 2.0 mg. Propesin (propyl-p-aminobenzoate).

DOSAGE: In superficial oropharyngeal infections, 1 troche q.i.d.; after tonsillectomy, 1 troche chewed for 10-15 minutes q.i.d. from the first through the fifth post-operative day.

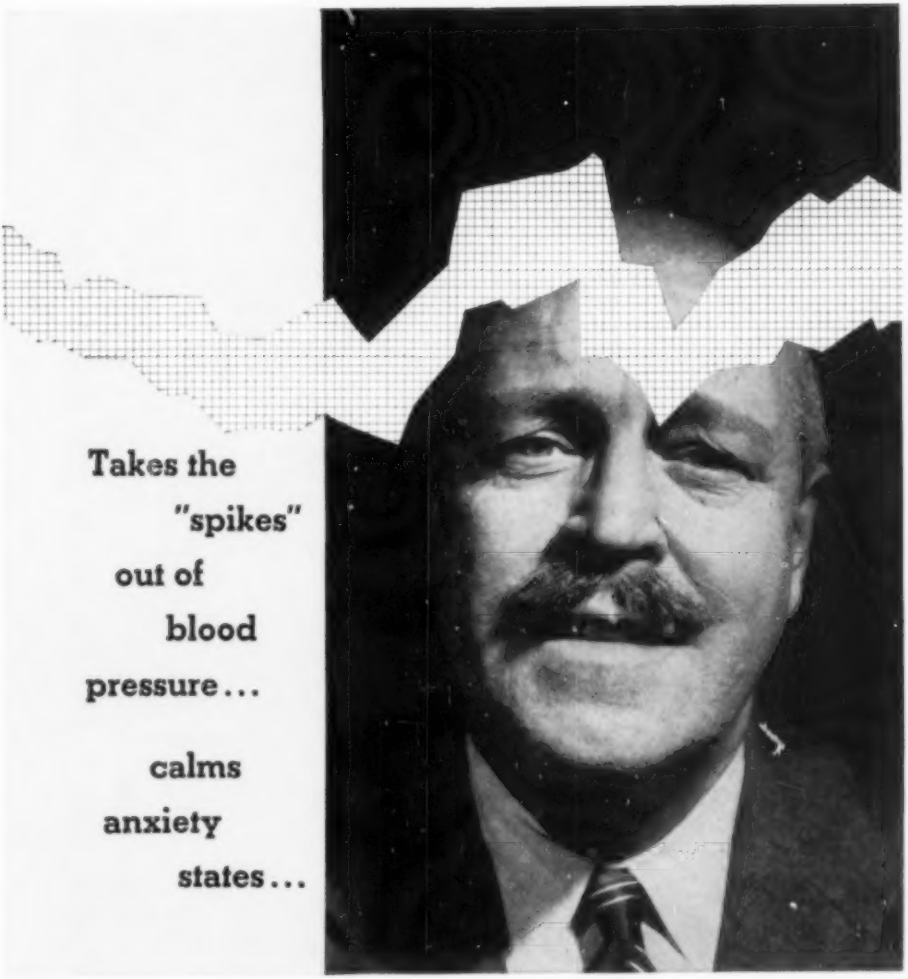
AVAILABILITY: Packages of 10 and 20 troches.

1. Granberry, C., and Beatrous, W. P.: E.E.N.T. Mo. 36:294 (May) 1957. 2. Rittenhouse, E. A.: E.E.N.T. Mo. 36:406 (July) 1957. 3. Fox, S. L.: Clin. Med. 4:699 (June) 1957.

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J. A. Bargen: "The management of patients with ulcerative colitis", Med. clin. North America 1956 (March) p. 541.

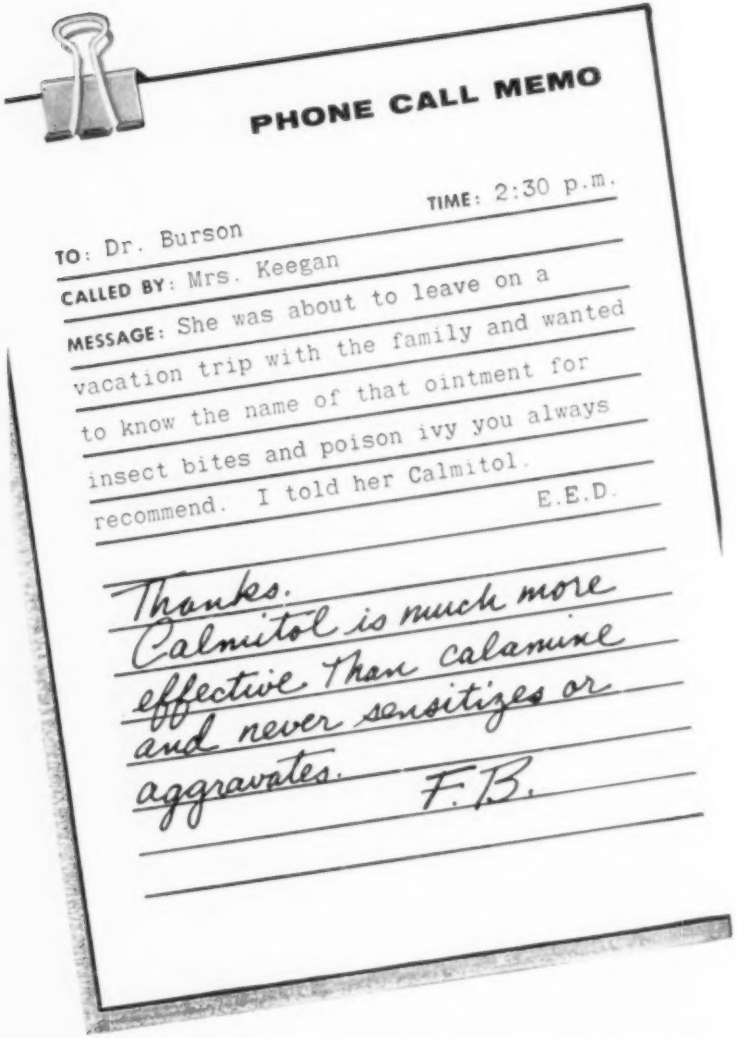
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L. E. Nelson: "Present-day concepts of the treatment of ulcerative colitis," Minnesota Med. 40:552 (Aug.) 1957.

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